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The Journal of the American Medical Association

Published Under the Auspices of the Board of Trustees

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SOCIALISTIC TENDENCIES IN MEDICINE *

JAMES A. GARDNER, M.D.
BUFFALO

It is not my object to decry the benefits to humankind and to civic life which have come from some of the progressive movements brought about by sincere effort; but, in recent years, under cover of promoting the welfare of society or some part of it, there have been permitted to be inaugurated many so-called reforms which, in reality, are little more than the outcome of the emotional desires of restless faddists or of the ideas of extreme and radical discontents.

The contention is sane that all reforms of whatever nature should be made only after patient and scientific investigation of the causes and the cure of the evil sought to be corrected, and that the desire to bring about such reforms presupposes knowledge obtained by serious investigation and careful research, unhampered by emotion or prejudice.

It is not an exaggeration to state that, in many instances, sincere and enthusiastic advocates of social and welfare legislation, so-called, are not familiar with the full purport or essential details of the measures they advocate. It is not at all uncommon for boards of directors or other governing bodies, after a few moments' consideration, to announce support or opposition to legislation which has required weeks of study by men conversant with the subject before they are willing to pass judgment upon it. Propagandists, through well-meaning people, have been doing much work among our law making bodies which, in the near future, will have to be undone.

PROPAGANDISTS IN THE FIELD OF MEDICINE

The field of medicine has been a fertile one for the agitator and the propagandist. The physician has always been ready to aid in measures for the betterment of humanity. It is fair to assert that no other profession has been so lacking in self-interest. It is perhaps due to this willingness to help in every movement for physical and moral advancement that the reformers and uplifters have been allowed to invade, unopposed, the practice of medicine and surgery, until the time has arrived for raising the danger signals. The peril of the situation becomes more urgent when it is realized that the public is being educated to believe that the socialization of the medical profession will bring higher standards of health. The fact is that, with the initiative and individuality of the physician removed, the profession will cease to attract to it men of energy, ability and ambition, who are now keeping American medicine in the front rank of intellectual and scientific achievement.

The drift toward paternalism and pauperization is strong. Beneficent social workers have been working overtime to give us our Sheppard-Towner maternity bill, which will cost the taxpayers about $6,000,000 for five years. Also, a bill was introduced for the formation of a national board of health, with a seat in the cabinet providing for federation of all state, municipal, and county health officers, and placing them under a secretary of health at Washington. It provides for a suitable central office for each health division and for regional hospitals and sanatoriums, to be supported jointly by the state and the federal government, so that adequate free facilities may be provided for all those suffering with infectious diseases, particularly tuberculosis, as well as surgical diseases, in order that these diseases may be cured and eradicated. Only $63,000,000 is needed to develop this idea.

In New York State, we have managed to escape the fetters of public health insurance for the time being, but we expect, each year, that it will appear in the legislature under another name. I shall not refer to the bills of this type that were introduced in the last Congress.

CHARITABLE INSTITUTIONS

In the field of medicine, we find an increased number of public hospitals and charitable institutions; and there is an ever increasing attempt to build up, under governmental control and support, medical charities, in the nature of health centers, diagnostic clinics, bureaus of health insurance, compensation acts, and other like public activities for the purpose of caring for those who supposedly are unable to pay. These medical charitable institutions, however, are not confining their care to needy charitable cases, but, increasingly, by skilful advertising and other effective means, are bringing under their care those who are able to pay for medical treatment.

The slogan of "free health" has an alluring sound; but it is false in its concept. The public needs protection; but primarily it needs education. If the public were educated and knew what it is receiving, there would be no lodge practice or splitting of fees, and chiropractors and the other medical isms would disappear. Faith in human nature leads many people to accept ideas from friends or take too seriously what they read. It has always been an amazing anomaly that a man seeks and willingly pays for the highest degree of legal skill to protect his property, while he is willing to barter his life away to mediocrity.

Prevention and education need the aid of the government; but the state should not compete with individua

* Chairman's address, read before the Section on Urology at the Seventy-Third Annual Session of the American Medical Association, St. Louis, May, 1922.

skill and superior knowledge and efficiency in the care of those who have money to pay and so should not be treated at public expense. The evil results are twofold: The medical profession will lose its motive and impetus to go forward, and, consequently, its standard will be lowered and its progress cease; and the patients who are treated free by the state will sacrifice their self-respect in their willingness to be pauperized.

The needy poor have always been cared for cheerfully by physicians, and it is reasonable to believe that this policy will not change. Many hospitals, and scientific laboratories have been established and the best facilities available have been installed to care for the sick when they are unable to pay. This class of patients is also desired by the college hospitals, where students are instructed by the best trained teachers. The college hospitals open their doors to the poor for this reason, and patients have the benefit of treatment by the most skilful physicians and surgeons in the community.

In the municipal or state-owned hospital, with its large financial backing, we find many positions for willing workers. Large buildings must be provided, with many beds, the more the merrier. Of course, if the management cannot keep these beds full, the number of employees must be cut down, so there is every inducement to care for as many patients as possible. Rivalry exists among these state-owned institutions to see which can hold the largest clinics. Naturally, the boards of trustees and the superintendents, if they have the money, will make every effort to develop large clinics; and the mere fact that a patient has plenty of money with which to compensate his family physician or a specialist for any treatment he may require will not interfere with his treatment free of charge if he is an "interesting case."

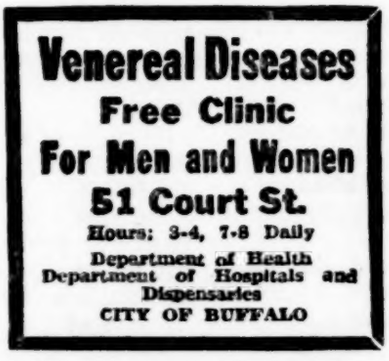

Fig. 1.—An appropriation of $2,500 a year was made by the city to carry this insertion in four of the daily papers.

HEALTH CENTERS

In Buffalo, the health center has been developed, and we have had ample opportunity to watch its growth. The department of hospitals and dispensaries is a well organized machine; 25 per cent. of our physicians are serving with or without compensation, some on full time at from $1,500 to $3,000 a year.

In the urologic department, there has been a very rapid growth. By the expenditure of $2,500 a year for advertisements in the daily press, stating that patients are cared for free of charge, the treatments given were increased from 100, in 1916, to 24,949, in 1921. Urologists are employed at $760 a year for part time. One of our city urologists stated that he saw from fifty to seventy patients in a two-hour period three times a week. He accounts for the number of cases cared for by the excellent system. Gonorrheal patients irrigated themselves, the orderly massaged them and a nurse prepared the arsphenamin, so the urologist's only job was to insert the needle. There was no laboratory attached, and no smears or urine were examined. If the physicians wished these examinations made, the patients were sent to the city laboratory and reports made at a later date. Does any one think that these patients are getting service, even if it is free? There is no official dividing line between those whom they care for as free patients and those who are refused because of their ability to pay. An announcement has been made from time to time that any one making more than $20 a week will not be cared for. Therefore, those who came to the clinic in their automobiles never had an income of more than $20 a week.

With the necessity of seeing so many patients in such a short period, the dispensary physician must neglect his most important duty, that of advising the patient of the great danger of infecting others while he is still an active carrier of disease. He loses the personal touch with his patient which is the successful element in the treatment of disease. In private practice, the physician is not only a physician, but more often a friend also, and the relationship with his patient is a very personal one. Wholesale or commercial methods cannot succeed in medicine. The treatment of the sick is individualistic, and the state should not try to assume this function.

The private physician must compete with the government employee, the latter having offices, equipment and free drugs to aid him in procuring patients. He is content to accept the princely salary of from $75 to $150 a month. The private physician who cares for a venereal case is supposed to furnish his competitor, the government, the name and address of his patient.

This kind of interference would never be countenanced in the business world; but it must be remembered that the physician prides himself on not being a business man; therefore, he permits it.

Why not pay the laborer a living wage that would permit him to live and pay for his medical attendance, rather than ask the physician to make up the deficit in so-called charity hospitals and dispensaries? We want to give the needy poor better care than they have ever received before; but this cannot be done if we have to care for those who can afford to pay.

THE VENEREAL PROBLEM

Public health is the musical instrument easiest for the welfare worker to play, and the softest chord is the venereal problem. They not only are able to stir the sympathies of the public, but also can arouse it to supporting the movement through fear of infection. The government has given considerable encouragement to this movement since the beginning of the war, together with semiprivate charities which have sprung up, claiming that they stand between the venereal clinic and the specialist with regard to the cost to patients.

The question whether or not free treatment and the ease with which it can be procured does not encourage the patient "to take a chance," rather than stamp out the disease, has yet to be answered.

The urologist, I believe, will, in a short time, be stripped of his venereal work so far as private practice is concerned. In the more technical field, the cystoscopic examination and diagnosis, together with surgery of the urinary tract, the encroachment will be less rapid, but nevertheless progressive.

RESULTS OF "FREE HEALTH"

To show how insidious is this virus of free health under the guise of medical charity, let me quote from

the announcement circulated in the health week campaign, by the council of the Medical Society of the County of Erie, the campaign headquarters being at the Buffalo City Hospital:

> Throughout the week members of the Medical Society of Erie County will be in attendance for diagnostic and advisory purposes, free of charge, regardless of financial standing of patient. All reports will be mailed to physicians designated by applicants.

This was a free campaign—free movies, free exhibits and free medical examinations. In the amusement column of the daily press, immediately above the announcement inserted by the Christian science church, appeared the advertisement presented in Figure 2.

If we draw attention to the fact that physicians who are not on public payrolls will have difficulty in making a living should this so-called "free health" reach its logical outcome, the public may not be sympathetic until the awakening comes. When, however, the physician's success becomes dependent on political preferment and the principle of medical socialism is substituted for the keen rivalry which now exists, and which calls for the best brains and the highest resource to achieve actual and deserved success, the patient will come to know that free health is at first a meaningless and then a dangerous term. Health can be obtained and preserved through education and by the exercise of knowledge and skill. It cannot be procured or maintained by the construction of palatial hospitals at public expense, and by the haphazard treatment of disease by physicians who are without personal interest in their patients, and whose reward is received from the public treasury and not in the consciousness of duty performed, with the incident recognition and success which such performance brings to the individual. Socialized medicine can no more succeed than socialized industry has succeeded. Its failure is as sure as its consequences are appalling. There can be no such thing as free dispensaries and free clinics—they are bought and paid for by every member of the community. They are expensive, as is everything conducted by the government, and the care given by the state to the sick has been and always will be inefficient. Taxpayers have a right to protest against paying medical bills for those who are financially able to defray their own expenses. It is making liars and cheats of numbers of people.

Many have come to believe that this free service, for which they should be made to pay, should be extended to the matter of street car fares, and of gas and electric light.

AMUSEMENTS. AMUSEMENTS.

ERIE COUNTY HEALTH WEEK CAMPAIGN
TUESDAY TO SATURDAY. OCTOBER 18-22, 1921.
CONDUCTED BY
The Medical Society of the County of Erie, State of New York
IN CONJUNCTION WITH ITS
CENTENNIAL CELEBRATION
FREE HEALTH LECTURES by Physicians and Dentists
FREE HEALTH MOVIES. FREE HEALTH EXHIBITS.
FREE MEDICAL AND DENTAL EXAMINATIONS. Physicians and Dentists will be in attendance throughout the week for diagnostic and advisory purposes. All reports will be mailed to Physicians or Dentists designated by applicants.
BUFFALO CITY HOSPITAL
NO. 462 GRIDER STREET, 2:00 TO 10:00 P. M. DAILY

FIRST CHURCH OF CHRIST, SCIENTIST,
IN BUFFALO, NEW YORK, ANNOUNCES A
FREE LECTURE
ON
CHRISTIAN SCIENCE
BY
MR. JOHN J. FLINN, C. S. OF EVANSTON ILLINOIS
Member of the Board of Lectureship of the Mother Church—The First Church of Christ, Scientist, in Boston, Mass.
ELMWOOD MUSIC HALL, Virginia and Elmwood Ave.
ON FRIDAY EVENING, OCTOBER 21st, 1921
AT 8:15 O'CLOCK — THE PUBLIC IS CORDIALLY INVITED

Fig. 2.—The upper advertisement, which appeared in the Buffalo Express, Oct. 21, 1921, was authorized by the council of the Erie County Medical Society. To pay for this advertising campaign, $1,600 was collected from milkmen, instrument houses and druggists.

It is not wise for a state to pauperize its people, nor is it fair to the medical profession to deprive it of its legitimate livelihood.

The man who takes up the study of medicine in New York State must spend, after he leaves high school, the equivalent of two years in college and four years of the hardest kind of study in a medical school, and at least one year's, or more often two years', internship in a hospital. Before he can begin to earn his living, he must spend seven or eight years in study and work.

The physician has always been too busy looking after the needs of his patients to give much time to his own interest. As we view the changed conditions in the last few years, unless he awakens to the drift of the tide, there will soon be little inducement for a young man of real ability to enter the medical profession. Even now, after he has finished his hospital internship, he finds that the cost of opening an office and waiting for a practice is appalling. If he accepts a municipal or a state position, which gives him an income of $500 or $1,000 a year, it will help to tide him over a few years. Habits are easily formed. He receives a slight increase as years pass, but he loses the courage to break away and strike out for himself. His ambition and incentive have been lost. The young physician, ambitious to rise in his profession, and realizing that only by hard work and conscientious study can he accomplish this end, finds that, while he is improving himself, he incidentally is making himself a better public servant. If his incentive and ambition are taken away by some government job, will he be any different from the clerks that we find now who have held the same position for years, and who, if they lose their positions, are unable to support themselves?

Throwing aside all consideration of the medical profession, a very serious outlook confronts us. Without realization of the outcome, a dependent class is being formed, a class which will next demand other benefits without pay or effort. It is my belief that the time has come for action on the part of physicians who are proud of their profession. We have been quiescent and complaisant, until the political doctors and doctor politicians have gained a foothold which will be hard to break. They make an insidious plea for public support and a seductive argument to gain the good will of honest and fair-minded people. They have patronage which they distribute judiciously among those whose help may be desired either within the medical profession or among outside political or other influential circles. The medical profession cannot be free

and uncontrolled with these medical machines, powerful and active with their advocates and defenders, spread over a city or a state, with jobs to distribute and with power to destroy a private practice built up after years of struggle and faithful service.

It will not do to scoff at the danger or minimize its importance. In its inception, it was harmless. In its spread, it has become a menace to medical men in their standing, ideals and progress. If we do not destroy socialism in medicine, it will destroy us.

The field of social welfare or social reform has developed to such an extent in recent years that it is now a recognized profession, remunerative and popular. The inauguration of a particular reform movement is usually followed by the formation of an organization with a membership more or less inactive but supplying funds to one or more secretaries to carry on active propaganda.

Let me add that I deplore this general and growing tendency to ask the government to do it rather than to do it ourselves. This inclination has been in direct ratio to the increase in our unassimilated aliens. They have always been directed or driven by some one who thought for them. It may have been for good or for bad. This class is easily influenced by propaganda to believe in the socialization of everything. We are being standardized, and sterilized and uplifted to the point of stupidity.

SOLUTION OF THE PROBLEM

The solution of this problem may be stated under three heads:

1. There should be a social service ably trained to make real and thorough investigations and competent to distinguish between the needy poor and those possessing the ability to pay.

2. There should be an awakening of the medical profession to the realization that it is equally responsible for this pauperization. There should be censorship of the services of the physician by some responsible body like the county medical society, as has been done in contract practice, so that patients able to pay should not be cared for gratuitously.

3. There should be education of the public to an understanding that if the standards of medicine are lowered through the loss of impetus and initiative in the young physician, the public will be the chief sufferer.

General Electric Building.

Ultimate Fate of Syphilitic Children.—A series of investigations, extending over twenty-five years, into the ultimate fate of children born of syphilitic parents—all in the better class of the population—gave the following results: There were 139 families with 569 children. The 139 women had 263 syphilitic infants born alive, 253 dead babies and fifty-three living, nonsyphilitic children. Of the 263 syphilitic children born alive, fifty-five died before the age of 4 years. Of the 208 individuals who were the subjects of prolonged observations, 25 per cent. remained alive and without attacks; 14 per cent. died within the first year. All the other children have shown symptoms of disease directly traceable to syphilis. Apart from manifestations on the skin and the mucous membranes, affections of the nervous system, together with moral insanity, were most frequent. According to the statistics of hospitals with their badly fed, unhealthy applicants, 70 per cent. of all syphilitic babies die in their first year.—*Hochsinger: Ultimate Fate of Patients with Hereditary Syphilis Among the Better Classes.*

DETECTION OF TYPHOID CARRIERS

REPORT OF FOUR OUTBREAKS*

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Formerly, field investigations of typhoid fever were seldom undertaken by the Minnesota State Board of Health, except in the presence of an outbreak of considerable proportions, usually traceable to a polluted water supply. Since 1911, epidemiologic field investigations have been made, as far as possible: (1) when a physician or health officer requested investigation; (2) when data furnished by the attending physician or health officer, alone or when associated with previously collected data, have indicated some local source of infection, or (3) in the absence of pertinent data, whenever time and funds have permitted, many investigations being made while the investigators were in the field primarily for some other investigation, often weeks or even months after the occurrence of a single typhoid case.

Before going into the field, the epidemiologist looks up the history of typhoid fever in the locality to be investigated, as recorded in the files of the division of preventable diseases. Our files contain physicians' original case reports and all data previously obtained from physicians and health officers and collected by epidemiologists, together with original records of laboratory examinations of blood, feces and urine, including records of Widal examinations since 1896. In addition, the records of the division of sanitation, concerning city and village water supplies, sewerage systems and certain creameries and pasteurization plants are also accessible.

In the detection of typhoid carriers, carefully collected data, supplemented by the work of the laboratory, are necessary, as suggested below.

1. Detailed case data, with special reference to source of milk and cream, to places where patient partook of food during three weeks prior to illness and to changes in personnel in the home during the same period.

2. Widal specimens from all handlers of food and milk partaken of by patient or patients in the home and elsewhere, and from all members of patient's household.

3. Feces and urine specimens from all such food and milk handlers giving a history of typhoid or continued fever, and from those in whose blood the Widal reaction is present or atypical.

4. Feces and urine specimens from any person or persons to whom data point as a probable source of infection, even though Widal reaction and history of typhoid or probable typhoid fever are absent.

Since Jan. 1, 1913, the division of preventable diseases has identified and placed under supervision eighty-six carriers of typhoid (seventy-two) and paratyphoid (fourteen) bacilli. Four hundred and sixty cases and thirty deaths have been traced epidemiologically to these carriers, two of whom have meanwhile died.

Four outbreaks which illustrate different phases of the carrier problem have been selected for report at this time. In reality, two outbreaks each are reported under Outbreaks 3 and 4.

* From the Division of Preventable Diseases, Minnesota State Board of Health.
* Read before the Section on Preventive and Industrial Medicine and Public Health at the Seventy-Third Annual Session of the American Medical Association, St. Louis, May, 1922.

FIRST OUTBREAK

No cases of typhoid fever had been reported from D., a village of about 250 inhabitants, since 1913, when Dr. W. P. Greene, then epidemiologist of the state board of health, traced thirteen cases, which had occurred during the three preceding years, to a woman who had had typhoid fever in 1910, and subsequently sold milk in the village. March 4, 1921, a telegraphic request for assistance in an outbreak in children was the first information received by the division of preventable diseases that typhoid fever had reappeared in this village.

Immediate investigation showed that eleven cases, eight in children, three in adults, in four families, as shown in Table 1, had occurred between Dec. 27, 1920, and March 2, 1921, the early cases having been diagnosed as influenza, pneumonia and "nervous breakdown." The three adult patients, and the two young children, aged 2 and 3 years, respectively, in the P. family, had attended "Ladies' Aid" meetings, attended by numerous other women and children, where light refreshments, with coffee, and milk for the younger children, were served. Except for these meetings and the usual frequent visits of close neighbors, there had been no visitors in these families, and the infected persons had not partaken of food away from home. There was no history of previous typhoid fever in the

TABLE 1.—DATA OBTAINED IN FIRST OUTBREAK

Case	Family	Sex*	Age in Years	First Symptoms	Widal Reaction	Water Supply	Milk Supply
1	R.	♂	2	Dec. 27†	March 18 +	Spring	S. Dairy
2	P.	♀	2	Jan. 7†	March 7 +	Spring	S. Dairy
3	P.	♂	7	Feb. 14	March 5 +	Spring	S. Dairy
4	P.	♀	3	Feb. 24	March 7 +	Spring	S. Dairy
5	H.	♀	23	Jan. 13†	March 10 Atyp.	Cistern	S. Dairy
6	H.	♀	21	Feb. 1†	March 10 +	Cistern	S. Dairy
7	H.	♀	14	Feb. 23	March 11 +	Cistern	S. Dairy
8	H.	♂	10	Feb. 28	March 10 +	Cistern	S. Dairy
9	B.	♀	39	Feb. 19†	March 7 +	Spring	S. Dairy
10	B.	♂	11	Feb. 25	March 5 +	Spring	S. Dairy
11	B.	♀	8	Feb. 28	March 11 +	Spring	S. Dairy

* In this column, ♂ indicates male; ♀, female.
† Approximate.

well members of the four families, and the Widal reaction was absent in blood specimens from all. Three families used water from a spring, and one used cistern water.

All four families took milk from the S. dairy. Mr. S., aged 63, who had moved to the village in September, 1920, had had typhoid fever forty-three years previously. His wife, aged 62, their four children, three of whom were away from home, and one granddaughter living with them, gave no history of previous typhoid. A hired man developed typhoid fever in 1918, while working on their farm. Mr. S. did the milking, and Mrs. S. handled the milk and milk utensils, which were never sterilized.

At the time of the investigation, six families, two of which were free from infection, bought milk from the S. dairy. A seventh family used milk from this dairy from September till November, 1920, without becoming infected. The Widal reaction was present in blood taken, March 6, 1921, from Mrs. S., who gave no history of typhoid or other continued fever, and was absent in blood from her husband and the other members of the family living at home. *B. typhosus* was isolated from feces from Mrs. S., March 16.

It might be concluded that all cases in this outbreak were due directly to consumption of infected milk, since only one patient denied drinking or otherwise consuming raw milk or cream, at least occasionally.

A study of the incidence of cases by onset, as presented in Table 1, along with that of the data obtained, suggests that all but the first two (in very young patients, both milk drinkers) may have been secondary cases, and that there may have been but one lot of polluted milk distributed. In Case 5, in the H. family, who denied consumption of raw milk or cream, the patient may have been infected through its use in cool coffee or tea or on desserts, or she may have been infected through direct contact with the patient in Case 2, who attended "Ladies' Aid" meetings while sick, typhoid fever not having been suspected.

Cases 9, 10 and 11 in the B. family, and Cases 2, 3 and 4 in the P. family, were intimately associated, the B. family obtaining their drinking water (spring water) from the P. family's kitchen. It seems probable that Mrs. B. (Case 9) obtained infection from contact with the P. family, and that the remaining cases in the P., H. and B. families were but indirectly due to infected milk. The fact that there was no history of previous typhoid fever in the carrier's children and that no cases had occurred among her customers in D. village for a period of three months, combined with the observation that she appeared to be a very neat housekeeper, rather favors this supposition.

SECOND OUTBREAK

April 30, 1921, assistance was requested in a typhoid epidemic in a well settled farming community in northern Minnesota. On investigation, May 1, it was found that fourteen men, all heads of families except one, had developed typhoid fever between April 10 and April 25. One secondary case developed later; and in five of the primary cases death ensued. The cases were in three townships and were from 2 to 5 miles (3.2 to 8 kilometers) apart. Each of the men had lived on his own farm for a number of years, having his own water and milk supply. Well members of but one family gave a history of previous typhoid fever. Five well members in the family of Case 8 gave a history of having had typhoid fever two years previously. (In blood from three, the Widal reaction was positive; one set of discharges from each was examined, May 12, with negative results.) There was no history of previous typhoid fever in well members of the remaining thirteen families. All fourteen men, after careful questioning, denied having eaten away from home, except two who had had one and two meals, respectively, at different restaurants, in two villages.

May 3, on inquiry as to farm sales, each recalled that he had attended a sale, April 1. About 100 persons were present at this sale. The men were served a cold lunch, consisting of pork, hog's head cheese and cheese sandwiches, cookies, friedcakes and coffee. The women and the auctioneer were served a hot meal without sandwiches.

Four women prepared the food. Three denied having had typhoid fever; and the Widal reaction was negative in the blood of two, but positive in the blood of the third woman. Two sets of feces and urine specimens from this woman were examined with negative results. Further specimens were unobtainable. Blood from the fourth woman, aged 65, who had had typhoid fever thirty-three years previously, gave a positive Widal reaction, May 2, and *B. typhosus* was found in nearly pure culture in a specimen of feces received June 7, after six days in transit. Three of her seven children gave a history of typhoid fever. This carrier had prepared the hog's head cheese in

her own home. It is probable that this meat was infected by the carrier in removing it from the bones, a hand process, performed before the meat becomes cold. A considerable mass of this warm chopped meat cooling slowly would act as an incubator for typhoid bacilli, if present. All who became sick had eaten meat sandwiches, although most of the men, very ill at the time of investigation, were unable to state whether head cheese or pork sandwiches had been consumed by them. Of two brothers who received head cheese sandwiches, one threw the meat away, while the other ate the entire sandwich. The former remained well; the latter developed typhoid, and died.

TABLE 2.—DATA OBTAINED IN SECOND OUTBREAK

Case	Sex	Age in Years	First Symptoms	Positive Widal Reaction	Comment
1	♂	58	April 8	May 9	
2	♂	29	April 10	April 29	Died, May 4
3	♂	55	April 15	May 2	Died, May 14
4	♂	29	April 15	May 11	Died, May 22
5	♂	60	April 17	May 9	
6	♂	33	April 17	May 9	
7	♂	30	April 18	May 2	Died, May 16
8	♂	38	April 20	May 2	Died, May 7
9	♂	30	April 21	May 2	
10	♂	28	April 21	May 4	
11	♂	30	May 21	May 9	
12	♂	19	April 21	May 2	
13	♂	29	April 25	May 2	
14	♂	34	April 26	May 9	
15	♀	11	May 29	June 11	Secondary to Case 12

The severity of this outbreak, attested by five deaths, which occurred among fourteen cases, may be accounted for by the ingestion, probably, of a massive dose of typhoid bacilli, such as might be expected to be present in food handled under conditions favoring bacterial development. The apparently long incubation period in the majority of these cases does not seem consistent with the incidence of cases in certain food outbreaks, and I believe that the actual dates of first symptoms in most of the cases were from seven to ten days earlier than the obtainable data indicated. Robust and stolid types of men are liable to throw out of account slight symptoms of illness such as occur early in the course of typhoid fever. At the time of investigation, the men were too ill to give much desired data.

THIRD OUTBREAK

Between October 28 and November 19, 1920, five cases of typhoid fever, two in adults, three in children, in four families, as shown in Table 3, developed in a small village in northern Minnesota. The epidemiologic evidence pointed to the S. restaurant as the source of infection, all patients having had several meals there during three weeks prior to first symptoms. Mrs. S., aged 54, who had had typhoid fever fifteen years previously, did all the cooking and handling of food, while her husband, aged 45, who had had typhoid thirteen years previously, occasionally helped in waiting on the table. The Widal reaction was positive in blood from both, December 6. *B. typhosus* was isolated from the urine of Mr. S., December 20. One set of urine and feces specimens from Mrs. S. was examined, with negative results. About this time, the husband left the state, and his wife continued the restaurant business. She refused to submit discharges for further examinations. Again, during October and November, 1921, six cases of typhoid fever, three in adults, three in children, in six families, as shown in Table 3, developed in the village. Again, the epidemiologic evidence pointed to this restaurant as the source of infection. All except Patient 11, who nursed Patient 10, had partaken of food prepared by Mrs. S., either at the restaurant or on some social occasion, within a period of three weeks prior to the first symptoms. Since 1905, when Mrs. S. had typhoid fever, six cases had occurred among her relatives, her husband, two sons, a daughter, a daughter-in-law (Case 8) and one granddaughter (Case 2), all cases being directly traceable to her.

TABLE 3.—DATA OBTAINED IN THIRD OUTBREAK

Case	Sex	Age in Years	First Symptoms	Widal Reaction	Comment
			1920 Outbreak		
1	♂	41	Oct. 28	Nov. 8, +	
2	♀	4	Nov. 1	Nov. 17, +	
3	♀	10	Nov. 12	Dec. 4, +	Sister to Patient 5
4	♂	35	Nov. 15	Dec. 4, Atypical	
5	♀	6	Nov. 19	Dec. 4, +	Sister to Patient 3
			1921 Outbreak		
6	♀	11	Oct. 9	Oct. 17, +	
7	♀	7	Oct. 30	Nov. 14, +	
8	♀	17	Nov. 1*	Dec. 9, +	
9	♀	4	Nov. 4	Dec. 9, +	
10	♀	24	Nov. 4	Dec. 9, +	
11	♀	20	Nov. 29	Dec. 9, +	Secondary to Case 10

* Approximate.

TABLE 4.—DATA OBTAINED IN FOURTH OUTBREAK

Case	Sex	Age in Years	First Symptoms	Positive Widal Reaction	Comment
			1920-21 Outbreak		
1	♂	63	Sept. 15, 1920	May 1921	
2	♂	15	Oct. 31, 1920	Nov. 1920	
3	♂	16	Nov. 10, 1920	May 1921	
4	♂	27	Jan. 1921	Feb. 1921	Secondary case
5	♀	29	Jan. 1921	Feb. 1921	Secondary case
			Later 1921 Outbreak		
6	♂	41	Aug. 1, 1921	Nov. 1921	
7	♂	3	Aug. 10, 1921	Oct. 1921	
8	♀	37	Aug. 20, 1921	Oct. 1921	Secondary case
9	♂	14	Sept. 15, 1921	Oct. 1921	Secondary case
10	♂	13	Sept. 15, 1921	Oct. 1921	Secondary case
11	♂	5	Sept. 22, 1921	Oct. 1921	Secondary case
12	♂	39	Oct. 1, 1921	Oct. 1921	Secondary case
13	♂	7	Nov. 1, 1921	Nov. 1921	Secondary case
14	♀	47	Sept. 15, 1921	Oct. 1921	Secondary case
15	♂	6	Oct. 13, 1921	Oct. 1921	Secondary case
16	♂	9	Sept. 13, 1921	Oct. 1921	Secondary case

Under duress of immediate closure of her restaurant, Mrs. S. submitted specimens, and *B. typhosus* was isolated from both urine and feces received, December 6. Mrs. S. was compelled to give up the restaurant business.

FOURTH OUTBREAK

In Dakota County, two cases of typhoid fever in one family in a rural district, reported in January, 1921, were not known to have any relationship to a third case, which had been reported from an adjoining township in November, 1920. Data on these cases were given to Dr. J. A. Carter, a graduate student at the University of Minnesota, who had been assigned to the division of preventable diseases for practical field work; and, on investigation, May 25, 1921, he found that five undoubted cases of typhoid fever, involving three families, had occurred between September, 1920, and January, 1921, as shown in Table 4.

In Case 1, not previously diagnosed, the patient had had the first symptoms of typhoid fever about three weeks after the arrival of a new housekeeper, Mrs. S. Case 2 was that of a boy who developed typhoid fever while working in the home of Patient 1, where he took one meal a day. The patient in Case 3, unreported, son of Patient 1, lived at home and after becoming sick visited Patients 4 and 5, his brother and sister-in-law, respectively.

Mrs. S., aged 50, gave a history of prolonged illness, with symptoms of typhoid fever during the early part of 1920. Though the Widal reaction was positive in her blood in May, 1921, four specimens each of feces and urine were examined with negative results.

First knowledge of a second outbreak in two townships in the vicinity of the preceding one was received in October, 1921, when blood specimens from members of three families gave a positive Widal reaction in eight persons, six of whom had had first symptoms in August and September. Investigation disclosed that eleven cases had occurred between August 1 and November 1, as shown in Table 4. The first, Case 6, developed about four weeks after Mrs. S. entered the home as housekeeper. Patient 7, a child in the neighborhood, visited Mrs. S. daily, and consumed food prepared by her.

The remaining nine cases, including six members of the family of Patient 7 and three persons in two neighboring families, were closely associated one with another, and were but indirectly traceable to Mrs. S. The Widal reaction was again positive in blood from Mrs. S., and at this time *B. typhosus* was isolated from urine.

SUPERVISION OF CARRIERS AND NEED FOR THEIR COMPENSATION

The state board of health, directly through its own representatives or through the local health officer, gives such instructions to be followed by the carrier and members of his family as are necessary for their protection and that of other associates, and explains the state law, which forbids a carrier to engage in the handling of any part of the public's food supply which may be consumed without being cooked after handling.

The local health officer is charged to keep the state board of health informed as to any change in the carrier's residence or occupation, and, as long as the carrier obeys directions, all publicity is avoided. In one instance only has it been necessary to prosecute a carrier for illegally returning to a forbidden occupation.

Three of the four carriers herein reported, one a dairy woman, another a restaurant keeper, and the third a practical nurse and housekeeper, were forced to abandon their chosen occupations, the nurse-housekeeper having no income aside from her earnings for the support of herself and one dependent. Such restrictions of individual rights and liberty are necessary to protect the public against these innocent distributors of disease and death.

Since 1915, the Minnesota State Board of Health has been entrusted by the legislature with the disbursement of a special fund for the support of a typhoid carrier who, after unauthorized newspaper publicity, was unable to obtain work. Should not the state offer compensation to carriers who must give up their chosen occupation in order to protect its citizens?

ABSTRACT OF DISCUSSION

DR. JAMES J. DURRETT, Memphis, Tenn.: Persons with chronic tuberculosis should not handle foods, and, if state compensation is given to one, the other should participate; also carriers of other diseases might have a just claim. The aggregate compensation thus distributed would be large, and, as we have in most places trouble getting adequate funds for recognized public health work, we should not ask for money for this purpose just yet. Formerly, when the death rate for typhoid was from 30 to 40, cases of typhoid were so numerous that small outbreaks caused by carriers were masked entirely, or made obscure and difficult to trace. With the typhoid death rate below 10, cases are sufficiently few to make even a small, sudden increase in the number stand out clearly if not conspicuously. I believe that this causes us to trace relatively more cases to carriers at this time than formerly. Sanitation that purifies our water and safely disposes of excreta goes a long way toward protecting us against carriers of the typhoid bacillus who do not handle foods. Those carriers who prepare food and handle raw milk constitute a special problem, and when detected they should be compelled to abandon this type of work, and they should be taught personal hygiene.

DR. JOSEPH N. GEHLEN, Minneapolis: With higher standards of water purification and with partial supervision of milk supplies in the larger cities and villages of Minnesota during the last few years, most of our outbreaks have been caused by carriers, although we have not always been able to trace the source. The question is what to do with carriers after we find them. We keep food and milk handlers out of business, and it does not seem fair to have their usual method of livelihood taken away from them without some form of compensation.

NUTRITION IN SCHOOLCHILDREN *

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It is not the purpose of this paper to discuss nutrition from the standpoint of calory requirement, relative protein nutritive value, vitamin content or metabolic processes. Our inquiry is directed more particularly to certain phases of nutrition work now being widely attempted in the schools, and which may affect, for better or for worse, 20 per cent. of the total population, representing the approximate school enrolment of a given community.

For untold generations, men and women have been born, "had their being," and died at a ripe old age, without thought of the state of nutrition or the character of the food ingested other than that inspired by a catholic appetite. But, within the last few years, all has changed, and the popular conception of malnutrition is—shall I say?—so inaccurate that the veriest tyro in public health work, after placing a child on a scale and noting comparative results, gravely announces the percentage of malnutrition in a given population group, and, in addition, prescribes the remedy.

Nutrition, or rather its opposite, malnutrition, bids fair to become a fad with large numbers of people of limited training and experience in health matters, although such men as McCollum, Mendel, Osborne, Hess and Unger in this country and many investigators in other lands as yet but "see through a glass darkly," despite the great advances made by them in the knowledge of metabolic processes and relative food values.

REPORTED PREVALENCE OF MALNUTRITION IN SCHOOLCHILDREN

The percentage of "malnutrition" (underweight) in schoolchildren reported by different observers varies widely, not only for children residing in the same locality, but also for those residing in urban as contrasted with rural communities.

According to Emerson,[1] approximately one third of the schoolchildren of the country suffer from malnutrition. In New York City, there seems to have been

* Read before the Section on Preventive and Industrial Medicine and Public Health at the Seventy-Third Annual Session of the American Medical Association, St. Louis, May, 1922.

1. Emerson, W. R. P.: Nutrition and Growth in Children, 1922.

a progressive decline in the percentage of malnutrition observed in schoolchildren, as shown in Table 1.[2]

The data first reported for New York City are based largely on estimates of nutrition according to the Dunfermline scale. Later, however, the relationship of weight to height was considered also in estimating nutrition status.

Walter S. Cornell,[3] director of medical inspection of schools, Philadelphia, reports that from 5.6 per cent. to 22.3 per cent. of 12,817 schoolchildren recruited

TABLE 1.—MALNUTRITION IN NEW YORK SCHOOLCHILDREN

Year	Number Examined	Percentage of Undernourishment
1917	171,091	21.6
1918	184,374	19.0
1919	248,064	20.0
1920	241,064	17.7

from the poorer districts of that city are 10 per cent. or more underweight, as shown in Table 2.

Of 26,318 schoolchildren examined in Cleveland, 1921-1922, L. W. Childs, director of health education for the board of education of that city, reports that 3,914, or 14.8 per cent., were 10 per cent. or more underweight, according to the Emerson scale.[4]

During the present school year, 17.9 per cent. of the schoolchildren of Detroit were found to be 15 per cent. or more underweight.[5]

In a survey made by the Elizabeth McCormick Memorial Fund,[6] Chicago, in 1920, 57.7 per cent. of the children attending a school situated in a "comfortable semiurban neighborhood" were reported as malnourished, and but 16.2 per cent. of those attending a school of the stockyard district were so classified. According to those reporting, this seems to indicate that, so far as these children are concerned, underweight is not altogther a question of either the quantity or the quality of the food supplied.

Reports of underweight observed in rural schoolchildren vary even more widely than do those for the cities. Service officers engaged in field investigations in child hygiene have, for a number of years, directed comparative studies of underweight in the schoolchildren of several states, as a part of these investigations. Following are some of the reported observations:

In Missouri, 1920-1921, of 9,214 schoolchildren examined in twenty-two towns, 38.3 per cent. of them were 7 per cent. or more underweight, as compared with 34.5 per cent. of the 1,698 children examined in the schools of three rural communities.

In five Mississippi counties, of 11,270 white schoolchildren and 5,840 negro schoolchildren weighed and measured in 1920 and 1921, 5,436, or 48.2 per cent., of the former, and 3,111, or 53.2 per cent., of the latter were 7 per cent. or more underweight, respectively. However, these percentages may not accurately represent the prevalence of underweight among the schoolchildren for the state at large, because the counties selected for study are notably affected by hookworm and malaria.

Of 1,841 children attending school in a favorably located and prosperous county in Florida, who were weighed and measured in 1921 and 1922, 591, or 32.1 per cent., were 7 per cent. or more underweight.

2. Month. Bull. Dept. Health, New York City, May, 1921, p. 109.
3. Cornell, W. S.: Personal communication to the author.
4. Childs, L. W.: Personal communication to the author.
5. Week. Health Rev. Dept. Health, Detroit, Feb. 18, 1922.
6. Wood, Mrs. Ira Couch: Nutrition Classes in the Chicago Schools, Mod. Med. 2: 388 (May) 1920.

WHAT IS MALNUTRITION?

In view of the varying and alarming percentages of malnutrition reported by different observers, one might well pause to inquire whether malnutrition is a distinct pathologic entity or merely a symptom. If the former, is the very great reported prevalence due to a newfound ability to recognize a disorder that has been of common occurrence for years past, or to change in the quantity, quality, selection and preparation of foods in common use? On the other hand, may not the widely varying percentages be due, in very large part, to the use of inexact standards for measuring nutrition, and, in instances, to defective and inaccurate apparatus?

I am not prepared to accept the popular conception of malnutrition as a distinct pathologic entity, and I believe that it is a symptom due to manifold causes operating either singly or in combination. This point of view is very succinctly set forth in a statement by Sir George Newman, quoted by Frank A. Manny, special investigator of the New York City Bureau of Welfare of School Children:

> In endeavoring to estimate a child's nutrition or its opposite (viz., malnutrition), we must think not only of bulk and weight of body but of ratio of status to weight; of the general balance and "substance" of the body and of its carriage and bearing; of the firmness of the tissues; of the presence of subcutaneous fat; of the condition and process of the development of the muscular system; of the nervous and muscular system as expressed in listlessness or alertness, in apathy or keenness; of the condition of the various systems of the body, and, speaking generally, of the relative balance and coordination of the functions of digestion, absorption and assimilation of food, as well as of the excretion of waste products. It is obvious that these are data which are likely to lead to a much more reliable opinion than the consideration of any one factor or ratio, however, expeditiously obtained or convenient in form or practice, and these data will demand a wider as well as a more careful and accurate observation of the whole physique of the child. Nor can an ultimate opinion always be formed at one inspection at any given moment. For nutrition, like its reverse, malnutrition, is a process and not an event.

TABLE 2.—WEIGHTS BELOW NORMAL IN PHILADELPHIA SCHOOLCHILDREN

No. Weighed	9.9 per Cent. Underweight		From 10 to 12.9 per Cent. Underweight		13 per Cent. or More Underweight		Total No. 10 per Cent. or More Underweight		Comment
	No.	%	No.	%	No.	%	No.	%	
470	382	81.0	59	12.5	29	6.0	88	19.0	Poor and colored
862	709	82.2	67	7.8	86	10.0	153	18.0	Poor textile workers
922	795	86.0	97	10.5	30	3.0	127	14.0	Poor textile workers
1,000	898	89.6	53	5.4	51	5.0	104	10.4	Moderately poor, American and German
505	454	89.9	35	6.9	16	3.2	51	10.1	Poor, Jewish and colored
1,079	1,002	92.8	36	3.3	41	3.9	77	7.2	Jewish and poor
867	810	93.4	20	2.3	37	4.3	57	6.6	Rowdies, white and colored
213	201	94.4	6	2.8	6	2.8	12	5.6	Poor, white and colored
906	704	77.7	..	....	..	....	202	22.3	Colored
1,067	902	84.5	..	....	..	....	165	15.5	Poor native whites
949	755	84.3	..	....	..	....	194	15.7	Poor native whites
1,473	1,259	85.5	..	....	..	....	214	14.5	Native whites
468	407	87.0	..	....	..	....	61	13.0	Moderately poor, white and colored
1,143	1,010	88.4	..	....	..	....	133	11.6	Poor, colored
891	818	91.8	..	....	..	....	73	8.2	Jewish, poor
12,817	11,107	....	..	....	..	....	1,711		
Average		86.7	..	....	..	....	.....	13.3	

Many factors are conducive to underweight. Of these may be mentioned causes relating to the diet, to personal and general hygiene, to lack of exercise or to overexercise, to defect and disease, to possible inherited

tendencies and to environment, all modified in varying degree by the economic and educational status of individual parents, and the disciplinary control exercised by them over their offspring. Furthermore, is weight alone a true measure of nutrition? Is it not possible to fatten a child, as, for example, an infant fed for a prolonged period on condensed milk, and yet fail to promote proper skeleton growth or increase in vital stamina? Is it not possible, by regulating the diet and daily routine, to cause a child to take on fat, even in the presence of a grave pathologic lesion, and this without removing the cause? Underweight, or malnutrition, if you please, is a distinct medical problem that must be combated by medical measures.

STANDARDS OF NUTRITION

A number of different standards of physical development have been advanced for use as a measure of the state of nutrition. Practically all of them estimate nutrition in terms of weight. The standards most generally used in this country are two; one devised by W. R. P. Emerson of Boston and the other by Thomas D. Wood of Teachers' College, New York. Both of these standards are based on weight in relation to the standing height according to sex, with the difference that Wood's tables consider the height and weight in relation to age. The more recent tables promulgated by Emerson also take into consideration the age factor. The chief objections to these tables are:

1. The standing height, which is subject to wide individual variation, is used.
2. They represent the average measurements of large numbers of children, it is true, but include children who are undernourished, or who are suffering from physical disability in varying degree; no doubt, including the measurements of a number with spinal curvature and other deformities which materially affect stature.
3. A percentage deviation from the average is arbitrarily adopted to represent undernourishment, ranging from 7 per cent., according to Emerson's standards, to 10 per cent., according to those advocated by L. Emmett Holt.
4. They fail to take into consideration hereditary factors which influence stature, on the assumption that the height-weight index applies to all races. This may be true, but has not yet been conclusively proved.
5. They are confessedly approximations.

BALDWIN'S TABLES

For a number of years, the child research station of the University of Iowa has been making a series of observations of special groups of children, under the direction of Dr. Bird T. Baldwin.[7] These children have been examined from year to year, and carefully measured and weighed, and the results have been embodied in tables that represent probably the most scientific study of this problem which has yet been made in this country.

Objections to Baldwin's tables are based on the ground that these measurements represent a selected group of children who, because of the very fact of their being weighed and measured periodically, are subjected to special bettering influences; a group which probably becomes more select through the falling out of the unfit from year to year. Furthermore, although these data were collected in widely separated communities, the number of children included are relatively few as compared with the total for the country as a whole. Considering the reported sources of the data used, the measurements of certain age groups may not be representative because based on a larger or smaller amount of data from single localities, with possible complicating race factors.

FOREIGN STANDARDS

Considerable interest in two foreign standards of nutrition has been manifested in this country within the last two years: Pirquet's pelidisi index, and Dreyer's assessment of physical fitness.

Pirquet's Index of Nutrition.—In contradistinction to the conception that energy exchange stands in definite relation to skin area, Pirquet of Vienna conceived the idea that the intestinal area, representing the surface which governs the amount of food absorbed, affords the proper basis for the determination of normal food requirements. In calculating the intestinal area, he used the observation made by Henning, in 1821, that the length of the intestine in centimeters is ten times the sitting height in centimeters, and, "as deduced from various observations on intestinal volume," that the width of the intestine is equal to one tenth of the sitting height, both measured in centimeters. On this basis, the area of the intestine is expressed as $10\ Si \times \frac{Si}{10} = Si.^2$

However, the food requirements of individuals differ widely, owing to many factors. In this connection, Pirquet worked out an index of nutrition based on the weight-sitting height ratio, the so-called pelidisi; namely, ten times the weight in grams divided by the cube of the sitting height in centimeters. A well nourished child, according to Pirquet, will register 100 per cent. In the practical application of his system to the feeding of many thousand Austrian children by the American Relief Administration, all the children that registered 94 per cent. or less were considered undernounrished.

Furthermore, Pirquet does not rely on the weight-sitting height ratio alone in estimating the state of nutrition and the food requirements of individual children, but classifies them under four headings, according to the results of physical examination; namely, sanguis (blood); crassitudo (fat); turgor (water-contour); and muscularis (muscle).

Using the first consonants in each of these four words as a skeleton; namely, s, cr, t and m, and inserting after each of these symbols the proper vowel, "a," representing normal, "e" and "i," moderately and greatly increased, and "o" and "u," moderately and greatly decreased, respectively, Pirquet coined the word "sacratama" to indicate a child in normal nutrition. By substituting other vowels to form, for example, the word "socrotemo," this would indicate a slightly anemic, moderately thin, fairly rounded out child of moderate muscular development.

Pirquet's system is probably more useful in connection with feeding large groups of children. Serious objections have been offered to the application of the system to individual children, because it is based largely on theoretical premises.

In a comparison of "pelidisi" with percentages by the Wood tables, in a series of 984 Los Angeles schoolchildren, Faber[8] found that approximately one half of

7. Baldwin, B. T.: Physical Growth of School Children, Extension Div. Bull. No. 59, University of Iowa, Dec. 1, 1919.

8. Faber, H. K.: The Pirquet System of Nutrition and Its Applicability to American Conditions, J. A. M. A. 77: 1837 (Dec. 3) 1921.

them would be graded as undernourished by the Pirquet scale, in comparison with one fifth and one ninth as 7 per cent. and 10 per cent. undernourished, respectively, by Wood's tables.

Representing the results of his study of these two scales by frequency graphs, Faber was able to show that, of the entire series of 984 cases, only 24.2 per cent. showed comparable indices of nutrition. Commenting on these findings, Faber declares that "from a statistical study of this sort, it is impossible to decide which method is at fault."

Dreyer's Assessment of Physical Fitness.—John Hutchinson, as far back as 1846, observed that patients suffering from pulmonary tuberculosis showed a lessened vital capacity. Inspired by Hutchinson's observation and stimulated by his experience during the World War, when vital capacity was made an important consideration in the selection of candidates for the British flying service, Georges Dreyer,[9] professor of pathology, Oxford University, made a series of intensive studies of carefully selected groups of persons, varying widely in age and physical development, and apparently he has been able to establish a definite relationship between vital capacity and certain body measurements, and to express the vital capacity as a function of these measurements.

According to Dreyer, when the weight in grams raised to the two-third power (or more accurately 0.72) is divided by the vital capacity, a normal constant for persons of the same class (occupation, mode of living, etc.) will be obtained, irrespective of age, weight or height. Some of his other formulas are as follows, V. C. being equal to vital capacity in cubic centimeters, N equal to 2, K equal to a constant, L equal to sitting height in centimeters, and Ch equal to chest circumference in centimeters:

$$\frac{L^2}{V.\ C.} = K^3$$

$$\frac{Ch^2}{V.\ C.} = K^4$$

$$\frac{L \times Ch}{V.\ C.} = K^5$$

By the use of these formulas, Dreyer has prepared a series of tables, for both males and females, of weight in relation to sitting height, chest circumference and vital capacity.

Weight is classified as: (1) possibly abnormal when it is found to be 5 per cent. above or below the calculated normal; (2) probably abnormal when it differs from the normal by 10 per cent., and (3) certainly abnormal when the deviation is as much as 15 per cent. from the normal calculated for a given sitting height, chest circumference or vital capacity.

Different persons, all apparently in good health, exhibit great differences in vital capacity, depending on the occupation and mode of life. This difference in normal persons, according to Dreyer, has nothing to do with fundamental bodily deficiencies, because it can be remedied by exercise and other measures.

I have long considered the sitting height a more reliable measurement than the standing height for determining physical standards, and I believe that Dreyer's methods and results should be carefully studied for comparison with the standards now in more or less general use in this country.

9. Dreyer, Georges, and Ranson, G. T.: The Assessment of Physical Fitness. London, Cassell and Company, Limited, 1920.

THE DUNFERMLINE NUTRITION SCALE

The Dunfermline scale, introduced by Dr. Alister MacKenzie of the Carnegie Dunfermline Trust, at Dunfermline, Scotland, distinguishes four nutritional groups on inspections:

1. "Excellent" means the nutrition of a healthy child of good social standing.
2. Children whose nutrition falls just short of this standard are classified as "good."
3. Children "requiring supervision" are on the borderland of serious impairment.
4. Children "requiring medical treatment" are those whose nutrition is seriously impaired.

The use of this scale presupposes medical training and experience. Following are some of the comparative results of the application of this scale by medical officers of the U. S. Public Health Service, modified as to terminology, to 9,973 schoolchildren, largely of Anglo-Saxon stock, residing in Delaware, Maryland, New York, South Carolina and Virginia.

TABLE 3.—PERCENTAGES OF 9,973 CHILDREN CLASSED AS OF FAIR, OR OF POOR NUTRITION

Age	Both Sexes	Boys	Girls
6	17.6	18.6	16.6
7	19.9	20.1	19.6
8	20.7	22.1	19.2
9	18.8	18.0	19.6
10	18.0	17.1	19.1
11	18.9	19.0	18.9
12	15.1	16.4	13.9
13	12.8	13.1	12.5
14	12.4	11.7	13.0
15	9.0	12.3	5.7
16	7.1	8.4	6.2

1. The percentage of defective nutrition in children classified according to clinical evidence other than weight was highest at 8 years of age, decreasing with age, as shown in Table 3.

2. From the fact that the mean measurements of the children classified as of fair or of poor nutrition were constantly less than those classified as of good or of excellent nutrition, the children classified as malnourished from clinical evidence other than height and weight, are shorter and lighter, and have a smaller weight-height index.

3. Differences in height are much less significant in judging nutrition than in judging differences in weight.

4. In comparing the percentage distribution of the two groups classified as of good or of poor nutrition, according to clinical evidence other than height and weight, it is found that, while on the average the children in the latter group weigh less than those in the former, some of the children in the poor group weigh more than some of the children in the good group. This is additional evidence that weight measurements alone are not sufficient for determining nutrition, but that these must be supplemented by medical examinations.

PROPOSED STUDY OF PHYSICAL STANDARDS BY U. S. PUBLIC HEALTH SERVICE

The Public Health Service is now making some careful studies of the physical development of schoolchildren in cooperation with the divisions of child hygiene of several state boards of health. It is purposed to extend these studies and to secure the cooperation of other state and municipal boards of health, in order that special measurements may be obtained of selected classes of children residing in both urban and rural communities, in sections of the country more or

less homogeneous in population and subjected to practically the same climatic conditions.

The measurements will be made in the case of certain racial groups; namely, children who may be considered of native American stock, native born children of foreign born parents, according to race stock, and of foreign born children, according to race stock. They will be made in identically the same manner, with instruments that have been standardized, and recorded on a special form. The special measurements will be used in calculating standards for comparison with those already in use, both in this country and elsewhere, and as the basis of standards applicable, if not to the country as a whole, at least to the different sections of the country from which the data were obtained. In fact, it is a question in my mind whether we can hope to adopt a standard which will be applicable to the country as a whole, owing to the effect of the wide geographic distribution of our population whose various elements are thus subjected to varied climatic influences and, therefore, different food supplies; and also because of the impress which necessarily must have been made on physical development by the tremendous alien immigration to which this country has been subjected in the last twenty or more years.

RELATION OF PHYSICAL DEFECTS TO UNDERWEIGHT

During the present scholastic year, one or more physical defects were noted in 74.9 per cent. of 8,887 schoolchildren in Detroit who were 15 per cent. or more underweight. No outstanding defect was observed in 25.1 per cent. of them.[5]

The reported percentages of defects found in greatest frequency were: enlarged or infected tonsils, 50.8 per cent.; defective teeth, 22.7 per cent.; faulty vision, 9.3 per cent.; mouth breathing, 9.2 per cent.

A comparison of gain in weight by children without nasalpharyngeal obstruction and those recommended for operation in a study made by the bureau of educational experiments, New York City [10] showed that 68.87 per cent. of thirty-two children without this defect made gains in excess of the normal, as compared with 55.1 per cent. of those without correction. In comparing the relative gain, however, only 6.1 per cent. of those having defects showed over 100 per cent. gain in excess of the normal, as compared with 31.3 per cent. for those without defects.

In April, 1920, a study of 200 underweight Baltimore schoolchildren from 7 to 14 years of age was made by officers of the U. S. Public Health Service, to determine the effect of the removal of physical defects on the rate of growth as represented by height and weight.[11] These children were exempted from nutrition instruction and from any special hygiene other than the correction of their physical defects. The higher percentage of monthly increase in weight noted may be largely, if not wholly, attributed to the correction of the physical defect.

It was found that the percentage monthly increase in the weight of boys and girls from 7 to 10 years of age was 0.47 per cent. and 0.27 per cent., respectively, before the operation for diseased tonsils and adenoids, as compared with 1.80 per cent. and 2.05 per cent. after the operation. In the case of children from 11 to 14 years of age, the percentage of increase was 0.47 per cent. and 0.84 per cent., respectively, before the operation and 2.04 per cent. and 1.99 per cent. after the operation. It is safe to assume that underweight in the case of these children was due largely to toxic absorption rather than to improper feeding. Expected percentage increase per month in weight computed from tables of average weights is presented in Table 4.

TABLE 4.—EXPECTED PERCENTAGE INCREASE PER MONTH IN WEIGHT COMPUTED FROM TABLES OF AVERAGE WEIGHTS

Tables	Age	Boys	Girls
Emerson	7 to 10 years	0.78	0.77
U. S. P. H. S.	7 to 10 years	0.72	0.79
Emerson	11 to 14 years	0.83	0.97
U. S. P. H. S.	11 to 14 years	0.82	0.97

TENDENCY OF STAPLE CROPS TO MODIFY NUTRITION

It is doubtful that more than a few children in this country are undernourished because of too little food.

According to McCollum,[12] "low vitality, low resistance and inefficiency, and a tendency to cumulative fatigue" result from adherence to a faulty diet, and a diet of cereals, tubers and muscle-tissue meats is inadequate. Furthermore, the cereal grains, which are incomplete foods, are coming into more extended use because of the tendency of farmers, owing to ease of production and probable relative low cost of production, to plant larger and larger acreage to these grains, which are so materially reduced in nutritive value by faulty milling. It is necessary to supplement the bread, meat and potato diet with milk and green leafy vegetables in order to supply mineral and accessory food factor deficiencies. In actual practice, however, the application of this thoroughly sound knowledge will be followed by failure unless at the same time other causes of malnutrition are looked for, considered and controlled. Of what avail is it to advise the underweight schoolchild to use milk when there is no milk? or to prescribe the leafy vegetables when the cereal grains and cotton form the staple crops in large areas of our country, even to the exclusion of products of the garden plot? Here nutrition becomes a matter of general education and of change in community custom and habit, involving time; and of state and federal guidance. It is not merely a question of weighing and measuring.

NUTRITION WORK IN RELATION TO REGULAR SCHOOL ROUTINE

So serious are the demands made on the time of both pupils and teachers by those engaged in or wishing to engage in sundry forms of welfare work, and by others with newly devised schemes for the general uplift which they wish first to try out in the schools, that any great extension of such activities, it seems, will leave but little time for instruction in the three R's. It is for this reason, all basically related forms of school health work should be united and harmoniously fitted to the general plan of health instruction and health supervision, utilizing the combined wisdom of both the educational and health authorities for such purpose.

Courses in health should be prescribed and given weight in the school curriculum corresponding to major

10. Health Education and the Nutrition Class, a report of the Bureau of Educational Experiments, New York, p. 57.
11. Correcting Physical Defects in School Children, Pub. Health Rep. 37, No. 15 (April 21) 1922.
12. McCollum, E. V.; Simmonds, N., and Parsons, H. T.: Supplementary Protein Values in Foods, J. Biol. Chem. 47: 111, 139, 175, 207, 235 (June) 1921.

subjects. Such instruction naturally should be adapted to the intellectual capacity of the different age groups. As regards nutrition, teaching in the early grades should be concerned more with the importance of milk, vegetables, fruits, cereals and the like, in the diet, from the standpoint that they help to make the child grow up to be strong. The teaching of the principles of nutrition and nutritive values should be reserved for the older grades.

Instruction in nutrition should not be reserved for and given only to a special group of children, either underweight or otherwise, but should include all children attending school, else we shall not find succeeding generations attaining the best possible physical development. Such instruction is necessary for the guidance of the potential parents of future generations, and to overcome the ignorance now so commonly observed concerning these principles and values.

Special nutrition classes for malnourished children are unnecessary in a well conducted school system providing proper health supervision. Children judged to be undernourished, by whatever standard, are candidates for open air classes and open air schools, where everything possible may be done to restore them to normal, including supplementary feeding, examination for and correction of physical defects, special instruction and graduated exercises, rest periods and a follow-up system reaching into the homes.

Weighing and measuring should be considered a necessary measure in every physical examination, and, in the case of children who fail to gain or lose weight steadily, the causes should be investigated and corrected.

The character of the school lunch should receive careful attention, especially in rural schools, where many children frequently come long distances after a hurried breakfast, bringing a hastily prepared, poorly selected lunch, or none at all, and remain all day. Aside from the question of the effect on health, an underfed child is no more fit for mental effort than is the laborer for physical tasks.

I do not wish to convey the impression that I can find no good in the nutrition work now being done by so many earnest, and, at times, inexperienced workers, because, for the most part, the measures recommended by them, if carried out, will be helpful in overcoming defective nutrition, no matter what may be the underlying cause. Furthermore, their persistent activities have served a very useful purpose in stimulating thought and action by those in positions of responsibility and qualified by training and experience to advise in such matters. Among the objections to unsupervised and indiscriminate nutrition work may be mentioned:

1. The tendency of the popular fancy to make a fad of a serious problem.
2. The danger that the enthusiasm of untrained workers will cause them to lose sight of the fact that nutrition and its opposite are medical problems requiring the best obtainable medical advice in individual cases.
3. The creation of a false sense of security in the mind of the parents of underweight children, by the temporary improvement following the application of well known principles of hygiene to ailing children, with potential diastrous after-effects, unless the treatment provided is based on medical advice.

CONCLUSION

I wish to emphasize that, in calling attention to the need of proper supervision of lay and nursing workers in nutrition, I must also call attention to the apathetic, and in many instances, indifferent attitude of the medical profession to the danger signals that have been so prominently brought to the front by the lay workers, and urge the importance of physicians' displaying more active interest in nutritional problems and giving more hearty support and cooperation in solving them.

ABSTRACT OF DISCUSSION

Dr. Borden S. Veeder, St. Louis: Every pediatrician has reached the point of view that malnutrition is an individual problem and not a group problem. There are a number of causes for malnutrition, among which may be mentioned physical defects, economic conditions, the environment of the child, and health habits. If you take a group of malnourished children, you will find one who has cardiac disease; a second with hyperthyroidism; a third who does not have the proper amount of sleep; a fourth who does not get the proper amount or, perhaps, the proper kind of food, and so on. In other words, in nearly every case of malnutrition, there is some one or more causes, and consequently malnutrition cannot be looked on or treated as a disease, but must be regarded as a symptom which may be produced by a number of causes. In order to understand an individual case properly, it must be studied from all sides, not only the physical but the environmental. The physician who sits in his office and tries to treat malnutrition by physial examination of the child alone, without entering into the life and habits and environment of the child, will not get very far, nor will the nutritional worker who tries to treat malnutrition by diet without understanding the physical background. If one tries to reach the malnourished children in groups, each group must be small, so that the individual child can be studied. I think that the study of malnutrition has led us all to the conclusion that one of the chief factors is overfatigue. The child who does not get enough rest, whether it is from lack of sleep, or from overexcitement, overwork or something that has to do with its habits, is not a healthy child and is usually malnourished, whether or not there are any physical defects present. The unfortunate thing about the subject of malnutrition is that it has been made a fad, and a good deal of the malnutrition which is said to exist in many of our schools, as a result of weighing children, is actually nonexistent. We find that malnutrition is more common in the lower grades than in the higher grades, although no efforts have been made at all to correct conditions. If one leaves a large percentage of the malnourished children alone for a year or so, a very large number of them will seemingly get well, no matter how one treats them. Although the amount of attention and notoriety that has centered about undernourished children and malnutrition in the last few years has probably done a lot of good by calling attention to the physical condition of the child, still it is my feeling and, I know, the feeling of many pediatricians, that a grave mistake has been made by a great many persons in regarding it as a group problem rather than a problem of the individual.

Dr. John Dill Robertson, Chicago: Lafcadio Hearn said years ago: "God never repeats His work." An individual once removed will never return or be duplicated through the eternity of eternities. In other words, no two individuals, even in the same family, are exactly alike. This being the case, it is difficult to make standards for the purpose of determination of so-called malnutrition. The condition cannot be determined by the same standards. In other words, we have no proper standard for easy determination of the condition of nutrition. By use of the yard stick, the age and the scale, thousands of children throughout America have been labeled as suffering from malnutrition without the history of their forebears being taken into consideration. In the majority of instances, a child follows the hereditary course of one or more of his ancestors. There is undoubtedly much malnutrition. This can be determined only by careful physical examination by an expert physician who is qualified to check up not only his digestive, respiratory and nervous systems, but every other system of his body. This cannot be done in the school, for it is necessary to check up on the blood and urine, and to make other laboratory tests. To say that a child is underweight and therefore must be fattened up, with-

out a thorough examination, is to grope in the dark. Would it not be better to investigate heart, lungs, kidney capacity, etc., before advising Willie to put on a few more pounds, which will require more blood vessels perhaps, than heart can accommodate, perhaps more tissue than the excretory organs can care for ? The so-called nutrition clinics in our public schools, during the last three or four years, have run the course of all fads, and, like every other fad, will disappear and be replaced by a sane program. This program cannot be carried out by nurses or by physicians not specially trained. In other words, the grocery clerk system of weighing, aging and measuring must be abandoned for one conducted by trained medical men.

DR. ALLEN J. HRUBY, Chicago: The fad of the nutritional clinic has run its course in the public schools of Chicago, under the supervision of teachers and club women. Our work in the Municipal Tuberculosis Sanitarium has shown us that some very careful work is necessary before we can adopt any standard. Dr. Grace S. Wightman, with a committee of dispensary physicians, was selected to take charge of a group of schools, to see whether they could adopt a standard for nutrition by a careful anthropologic study of the children. The final conclusion is that a careful clinical history and physical examination must be made, together with a study of the economic and sociological conditions; also a complete laboratory examination and an investigation of the condition of the internal secretions, before any conclusions can be arrived at. We have concluded in Chicago that all these points must be taken into consideration before we can make a diagnosis of malnutrition.

DR. W. L. HOLT, Knovxille, Tenn.: I have been much interested in this problem of malnutrition in the South. One of the things I noticed was the shortage of milk. I take 6 quarts of milk in my own family, so that as a health officer I practice what I preach. I found a great deal of malnutrition in Knoxville. In one school in the poor district not less than 28 per cent. of all children were 10 per cent. or more underweight; and we found a great difference between the boys and the girls, 18 per cent. of the boys and 35 per cent. of the girls being 10 per cent. or more underweight. That is one thing I am particularly interested in, and I should like to ask Dr. Clark or any one else what his explanation is regarding this difference in percentage between boys and girls. I also want to ask Dr. Clark what a reasonable amount of milk is for the average schoolchild. I believe that a quart is reasonable, but some men think a pint and a half.

DR. ISAAC D. RAWLINGS, Springfield, Ill.: I have been much interested in this paper because in Illinois we have felt that when weighing and measuring of schoolchildren is done without any physical examination, this procedure is more or less of a fad. We have been really concerned over the possibility of doing harm by labeling children as sufferers from malnutrition, and giving them milk that is not made safe by pasteurization. In 1911 we passed a law that no municipality could require tuberculin testing of the cattle supplying milk to the municipality, so we have no testing of tuberculous cattle except by virtue of the accredited herd act. I have found by consulting the newspaper clippings that the various clubs throughout Illinois have organized a plan of weighing and measuring children and have then fed these children. I understand that the milk is often not pasteurized, and I am afraid that it is not safe and that the children are really in danger from it. As to their physical condition and the need of food, it seems to me that this feeding is ill advised unless measures are taken to see that pasteurized milk is supplied when it is necessary to feed these children. If it cannot be obtained, commercially pasteurized, some method should be instituted whereby it is pasteurized at home or at school before being given to the children.

DR. FLORENCE MEREDITH, Philadelphia.: In Philadelphia, and perhaps everywhere, there is a tendency to overemphasize what may be done by merely weighing and measuring children and increasing the caloric intake. Malnutrition is a medical diagnosis, often most difficult for the physician to make. Weight offers only one diagnostic point: increasing the number of calories is only one remedial measure. The technic of the lay nutrition worker, valuable as it is, should be supplementary to thorough medical work wherever possible. Ideally, each case of malnutrition should be handled individually as to diagnosis and treatment. The nutrition class has met a certain need, because of the large number of children to be dealt with. But it is certainly not possible to do as good work with a group as with individuals. The sooner we are able to treat malnutrition as a medical problem and an individual problem, the better. All honor to those who have been successful with the class method, however. For a long time yet it will be the only possible method of dealing with a great deal of the malnutrition.

DR. JAMES STEWART, St. Louis.: I cannot say that I regard the question of nutrition and the selection of children supposedly suffering from malnutrition as being entirely a fad. In St. Louis, we have established a very efficient and conservative system. We felt that the question of nutrition should not be in the hands of the teachers or school principals. We believe that weighing or measuring of children should be entirely in the hands of the school physician or school nurse. We were fortunate in having a demonstration carried on by the Pubic Health Service in St. Louis a few years ago, and through that experiment we gained information that was so satisfactory that the board of education asked us to continue the work. The school hygiene division asked that a college course in nutrition, of two credits, be given to all school nurses. This has been completed within the last few weeks. We selected a group of children in the open-air schools, who were put on a regular routine of diet and health habits. Those who were found to be physically impaired had their defects corrected and the home surroundings improved by conferences with the father or mother or the one responsible for the child. With that cooperation, we believe that the work has been well done. It is our object that all school systems throughout the land will leave that work in the hands of the school physician or the school nurse, because, with the experience of the physician and the nurse, these children will be brought up to the proper standard, and because of the child's improved physical condition he will be able to go through school and graduate with less effort, possibly, on the part of the teacher and of himself. That is an economic advantage that should be recognized. In our open-air schools, the number of undernourished children and of cases of contagious diseases has been very low as compared with the regular elementary schools. That shows what these health habits and the building up of the child suffering from malnutrition accomplish when children are brought up to a special standard and their resistance has been increased to such an extent that contagious disease in these schools is practically nil.

DR. TALIAFERRO CLARK, Washington, D. C.: The object of my paper is not merely to call attention to nutrition work by untrained agents, but to sound a warning that they must not let their enthusiasm run away with them to the extent that they lose sight of the fact that malnutrition is a health problem. On the other hand, I must also sound a warning to those in authority and to practicing physicians that unless they wake up and take notice of underweight as a danger signal, the lay workers are going to continue this work unsupervised and with potential unhappy results. In regard to standards of physical development, I believe that it will be rather difficult to accept or adopt a standard that would be applicable to every child in every part of the country. Many factors must be considered in the preparation of such a standard. The Public Health Service at present is beginning a nation-wide study of the physical development of children that takes into consideration numerous factors bearing directly on this problem. One of the first steps considered was the standardization of the apparatus to be employed, so that measurements made by different persons in widely separated communities would be exactly comparable. Incidentally, it was found that the accuracy of scales and other forms of anthropometric apparatus varied greatly. This serves to call attention to the possibility of serious error in judging the state of nutrition, not only because of the selection of an arbitrary standard of deviation from the normal to represent underweight, but also because the instruments themselves, unless carefully standardized, may vary to the extent represented by such arbitrary standard.

ACCESSORY MUSCLE MOVEMENTS IN DELTOID PARALYSIS*

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CHICAGO

The preservation of certain movements, the loss of which is supposed to result from injury to particular nerves, has been observed for many years. Sherren [1] called attention to the fact that Swan, in 1834, was astonished at observing how much a rabbit could move its leg after experimental section of its sciatic nerve. Later Letievant [2] studied this phenomenon and termed it supplementary motility. Since that time, numerous investigators have observed its presence in various peripheral nerve lesions.

Supplementary motility producing abduction of the arm in cases of complete paralysis of the deltoid muscle has been observed in a number of cases. Few reports dealing specifically with supplementary motility in deltoid paralysis are found in English literature, and mention of it is often included in contributions dealing with broader subjects. It therefore seems that it is of value to confirm and emphasize this observation.

The first case reported was found in the almost inexhaustible fund of observations of Duchenne.[3] Since then the condition has been noted by Robert Kennedy, August Hoffman, Loewe, Kron, Rothmann, Wendenburg, Oppenheim, Ross and others, and more recently by Sherren, Forrester Brown and most of the students of injuries to the peripheral nerves sustained in the late war, including Coleman, Ingham and Arnett, and Benisty.

The frequency of supplementary motility in deltoid paralysis may be seen from the report of Bunts,[4] who, in 1903, found that in nineteen cases of circumflex nerve paralysis, seven patients recovered function; of the seven, four recovered function in the absence of the deltoid muscle.

I have observed four cases showing this supplementary motility:

REPORT OF CASES

CASE 1.—S. J., a man, aged 33, was struck on the head by a cable block, Oct. 5, 1920, and sustained a fracture of the surgical neck of the right humerus. When he regained consciousness, he noted that he was unable to abduct the arm to the side or to extend it backward. About six months after the injury he observed that he could abduct the arm in a direction slightly and obliquely forward. He was examined by me, July 13, 1921, when it was found that there was a complete paralysis of the deltoid muscle, with complete reaction of degeneration and a marked atrophy of this muscle. There was an analgesia of the area of skin ordinarily supplied by the circumflex nerve. He was able to abduct the arm obliquely forward to the horizontal position, and from this position to complete the process of abduction to a vertical position. It was observed that the infraspinatus was hypertrophied. During abduction the arm was rotated outward, and the pectoralis major became tense, apparently assisting in fixation of the head of the humerus into the glenoid cavity. Rotation of the scapula occurred early, and it could not be determined with any accuracy how much real abduction of the humerus occurred during the first phase of movement. The last phase was completed by the pectoralis major, supraspinatus and coracobrachialis. Abduction backward was impossible.

CASE 2.—A. T., a man, aged 23, was injured, Jan. 15, 1921, when a box weighing about 500 pounds fell 60 feet, striking him on the shoulder. He sustained a fracture of the scapula, of the humerus and of the radius and ulna at the elbow. Following the injury he was unable to move the upper extremity in any way. When examined, Jan. 27, 1922, he had a brachial plexus lesion involving the musculospiral, musculocutaneous and circumflex nerves. In addition to this he had a severe injury to the ulnar and median nerves as the result of a lesion in the forearm. For the purpose of this communication it is unnecessary to describe in detail the brachial plexus lesion; it is sufficient to note that the deltoid, biceps and coracobrachialis were paralyzed. The supraspinatus, infraspinatus, serratus magnus, trapezius and rhomboidei were conserved. He noted that about six months following the injury he was able to abduct the arm completely when he rotated the humerus outward at the beginning of the movement. It was observed that abduction was performed by first rotating the humerus outward by the infraspinatus; then a strong contraction of the supraspinatus, pectoralis major and triceps pressed the head of the humerus into the glenoid cavity, when the scapula was rotated by a strong contraction of the trapezius, serratus magnus and rhomboidei. In this manner the humerus was abducted to an angle of about 100 degrees, when internal rotation occurred and the pectoralis major and probably the supraspinatus completed the abduction. There was complete reaction of degeneration, and almost complete atrophy of the deltoid muscle. Abduction backward was impossible.

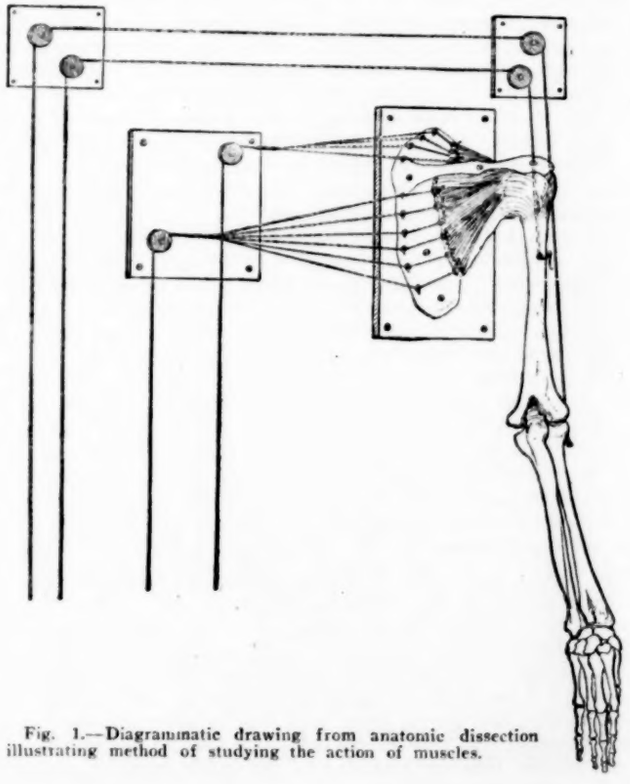

Fig. 1.—Diagrammatic drawing from anatomic dissection illustrating method of studying the action of muscles.

CASE 3.—N. T., a man, aged 37, was injured, July 9, 1921, by falling a distance of 12 feet, landing on his shoulder and the side of the head. Immediately afterward he found that he was unable to lift the arm, and subsequently noted that he was unable to abduct the arm except in a forward direction to a very limited degree. About five months after the injury he was able to abduct the arm to the horizontal position but in an obliquely forward direction. I examined him, Jan. 23, 1922, when there was a complete paralysis of the right deltoid muscle with extensive atrophy, complete reaction of degeneration, and an analgesia occupying the area innervated by the fourth and fifth cervical segments. Abduction was performed in three phases. During the first phase

*Read before the Section on Nervous and Mental Diseases at the Seventy-Third Annual Session of the American Medical Association, St. Louis, May, 1922.

1. Sherren: Lancet **1**: 726 (March 17) 1906.
2. Letievant: Traités des sections nerveuses, quoted by Sherren (Footnote 1).
3. Duchenne: Physiologie des movements, 1867, p. 78.
4. Bunts: Tr. Am. S. Soc. **21**: 521, 1903.

the humerus was abducted, apparently by the supraspinatus, the infraspinatus, producing outward rotation of the humerus, and perhaps the coracobrachialis and long head of the biceps. At about an angle of 60 degrees the scapula was rotated, as occurs normally, and the third phase was completed by the supraspinatus, pectoralis major and coracobrachialis. Abduction in a backward direction was impossible.

CASE 4.—E. D., a man, aged 45, was caught in a line shaft twenty-five years ago, and sustained a bilateral dislocation of the arms. Following this he noted that he was unable

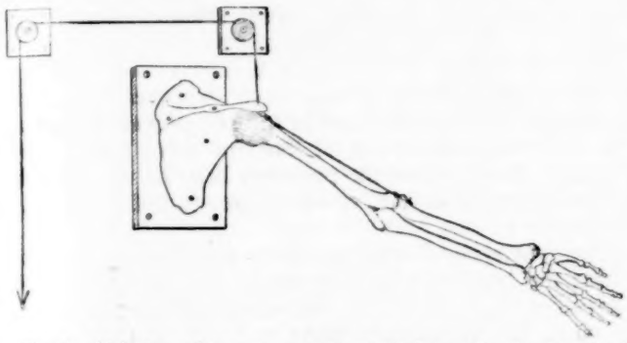

Fig. 2.—Abduction of arm to an angle of 60 degrees by the long head of the biceps.

to abduct the right arm. At the end of a year he began to draw it up along his side, shifting it backward so that he could get it into his trousers pocket. About three years afterward he could abduct the arm to a right angle, but could not flex and extend the forearm while the arm was in this position. He continued to improve until the present date, when he stated that he experienced no disability or handicap because of the condition of his arm in the pursuit of his ordinary occupation. On examination, the deltoid muscle was completely atrophied. The head of the humerus was covered only by skin and subcutaneous fat. The capsule of the joint was lax, and a considerable space could be observed above the head of the humerus. He was able to abduct his arm completely to the side and in flexion. He could approximate the palms with his arms abducted fully above his head. Abduction was performed in three phases, during the first of which the arm was abducted by the long head of the biceps, the supraspinatus, and in part by the infraspinatus and coracobrachialis. When the arm was abducted in the position of external rotation, he was unable to relax the biceps. When the arm was abducted in the position of internal rotation, the biceps was seen to be flaccid, whereas the triceps became tense. The second and third phases of abduction were completed about as in a normal person. Abduction in a backward direction was impossible, although the patient was able to slide his hand backward and upward so as to reach his hip pocket.

PHYSIOLOGY OF SHOULDER MUSCLES

The physiology of movements of muscles about the shoulder is somewhat complex, and current conceptions are obscure in some particulars and controversial in others.

Until recently it was the accepted view that in raising the humerus to a straight angle, the deltoid elevates the arm approximately to a right angle, after which elevation is completed by scapular rotation. This view will probably be modified through the investigation of Stookey,[5] who showed that the first cycle of elevation is accomplished by the action of the deltoid and supraspinatus, raising the humerus to about 60 degrees and accompanied by slight rotation of the scapula. The second cycle is accomplished principally by rotation of the scapula due to the action of the serratus magnus, trapezius, rhomboidei and levator anguli scapulae, which raises the arm to approximately 115 degrees, and is accompanied by slight elevation of the humerus. The third cycle is accomplished by elevation of the humerus from 115 degrees to a straight angle due to the action of the supraspinatus and deltoid, in which there is only slight rotation of the scapula. He pointed out that the coracobrachialis and the clavicular head of the pectoralis major were associated with the deltoid in the final stage of elevation.

The importance of the supraspinatus muscle was emphasized by Codman,[6] who believed that the deltoid could not act as an abductor of the arm unless accompanied in its action by the supraspinatus, whose power furnishes a fulcrum for the action of the deltoid, a view expressed in part by Winslow, in 1749. As pointed out by Stevens,[7] the subscapularis, the infraspinatus and the teres minor act as tractors to pull the head of the humerus into the glenoid, fixing it firmly; and, beyond a certain point, the infraspinatus and teres minor behind and the subscapularis in front may possibly take on an added function, although it is probably to a limited extent, namely, that of abductors as aids of the deltoid.

Thus far we have seen that, in the first phase, in which the deltoid is motofacient, it is supplemented by the supraspinatus and probably the infraspinatus and subscapularis, and in the third phase by the coracobrachialis and clavicular head of the pectoralis major.

ABDUCTION OF ARM IN PARALYSIS OF DELTOID MUSCLE

How has the abduction of the arm in cases of complete paralysis of the deltoid muscle been explained? Duchenne showed in his case that it was the supraspinatus, the serratus and the trapezius which supplied the power; Kennedy[8] pointed out, in addition, the influence of torsion of the vertebral column. Hoffman[9] considered the pectoralis major of prime importance. It is the opinion of Kron[10] that the pectoralis should, with the supraspinatus, pull the head of the humerus into the glenoid, while the serratus by rotating the

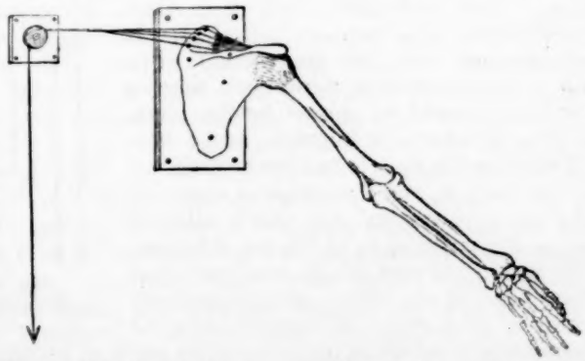

Fig. 3.—Abduction of arm to an angle of 45 degrees by the supraspinatus.

scapula elevates the arm. Loewe[11] attributed the action to the supraspinatus and trapezius. Kron gained the impression that in his cases the upper part of the pectoralis major acted as a direct elevator of the humerus, aided by the supraspinatus and trapezius. In one of his cases some assistance was given by the coracobrachialis and the infraspinatus.

5. Stookey, B.: Motofacient and Nonmotofacient Cycles in Elevation of Humerus, Arch. Neurol. & Psychiat. **4**: 323 (Sept.) 1920.

6. Codman: Bursitis Subacromialis, or Periarthritis of the Shoulder Joint, Tr. Massachusetts M. Soc., June 9, 1908, p. 13.
7. Stevens: Am. J. M. Sc. **138**: 870 (Dec.) 1909.
8. Kennedy: Brit. M. J. **1**: 1513 (Jan.) 1898.
9. Hoffman: Neurol. Centralbl., 1899, p. 113.
10. Kron: Deutsche Ztschr. f. Nervenh. **15**: 133, 1899.
11. Loewe: Aerztliche Sachverständigen Zeitung, 1899, p. 302.

To recapitulate, the accessory muscles were the supraspinatus, pectoralis major, coracobrachialis, infraspinatus, serratus magnus and trapezius. No effort has been made to determine which muscles participate in any particular part of the movement of abduction.

The function of each individual muscle under normal conditions is not an indication of its limitations in vicarious function. For example, the coracobrachialis and the clavicular head of the pectoralis major, acting in the first phase of abduction, would act as flexors of

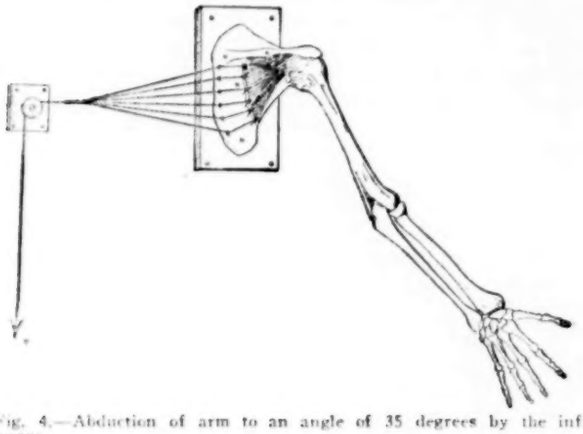

Fig. 4.—Abduction of arm to an angle of 35 degrees by the infraspinatus.

the humerus advancing it forward; but if the forward movement be counteracted by the infraspinatus, it is possible that they may act with it to produce abduction.

In an effort to understand the action of these various muscles, an anatomic preparation was made. The various muscles about the shoulder and arm were resected, leaving stumps at their origin and insertion, and the joint capsule preserved intact. Silk ligaments were constructed, attached to the insertion of the muscles and passed through rings at the point of origin, then through pulleys permitting traction in the direction of the normal action of the muscles. The shoulder blade was then screwed firmly to a support (Fig. 1). It was postulated that the contraction of a muscle could produce a movement only so extensive as would be shown by the angle remaining between the humerus and a vertical line after the muscle had been subjected to strong traction, and the humerus abducted passively to the vertical and slowly allowed to fall to the position at which the stretched muscle would support it. It was seen that the long head of the biceps acted as a direct abductor to an angle of 60 degrees; that the supraspinatus acted as an abductor to an angle of about 45 degrees; that the infraspinatus produced an abduction of 35 degrees, accompanied by an outward rotation of the humerus and slight backward movement, and that the coracobrachialis brought the arm obliquely forward and upward to an angle of about 30 degrees. The combined action of these muscles elevated the arm to an angle of about 65 degrees. It was found that when the infraspinatus and coracobrachialis acted together, the former tended to counteract the forward action of the latter. It was further found that when the arm was passively abducted to a position sufficient to permit the tuberosity of the humerus to pass under the acromial process, and when both the coracobrachialis and the infraspinatus were pulled on, the humerus retained this position; when the coracobrachialis was released, the arm fell to an angle of 35 degrees, and assumed a position of outward rotation (Figs. 2, 3, 4 and 5).

From the observation of the clinical cases and the anatomic model, it would appear that there are two distinct types of supplementary motility which permit abduction of the humerus in complete paralysis of the deltoid muscle. Of course, the movement of torsion or bending of the spine need not be included, since it only increases the distance between the dependent hand and the ground, and in no way abducts the humerus.

The movement of abduction backward seems never to be supplemented, so that such a movement as is necessary to put one's hand in the hip pocket is impossible, although Kron stated that the teres major can supplant the action of the posterior belly of the deltoid. His description of the resulting movement is unconvincing.

The first type of supplementary movement is that in which the head of the humerus is firmly fixed in the glenoid cavity, probably by the subscapularis, the infraspinatus, the pectoralis major and the supraspinatus. During this phase, external rotation of the humerus occurs. The serratus magnus and trapezius, with the rhomboidei, and levator anguli scapulae, then produce a rotation of the scapula, elevating the humerus; some actual abduction may likewise occur. Thus, the first and second phases of abduction are combined, but the second phase overshadows the first. The third phase may be concluded by the supraspinatus, the clavicular head of the pectoralis major and the coracobrachialis (Cases 1 and 2).

The second type is that in which the first phase of abduction of the humerus may occur as the result of the combined action of the supraspinatus, the infraspinatus probably acting in conjunction with the coracobrachialis and possibly the long head of the biceps; the second phase of abduction occurs as in the normal by the action

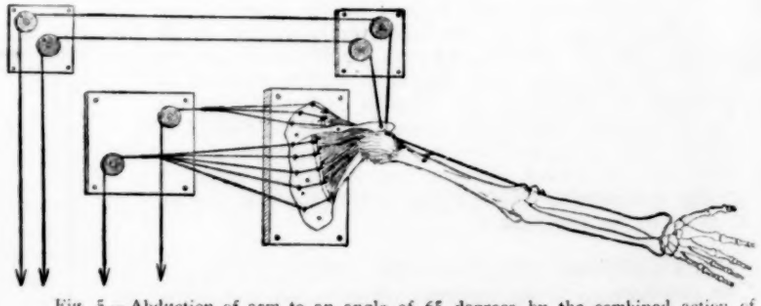

Fig. 5.—Abduction of arm to an angle of 65 degrees by the combined action of the coracobrachialis, long head of the biceps, supraspinatus and infraspinatus.

of the serratus magnus, trapezius, rhombodei and levator anguli scapulae; the third phase is completed by the coracobrachialis, the clavicular head of the pectoralis major and the supraspinatus (Cases 3 and 4). Of course, any one or more of these muscles may not participate in a given case.

25 East Washington Street.

Fixing the Mental Status of an Antivivisectionist.—"I have no hesitation in calling him—Pasteur—the greatest charlatan of the last century." This is the matured opinion of Pasteur held by Dr. Walter Hadwen of Gloucester, England, the leading antivivisectionist of Great Britain, who recently made a tour of propaganda in the United States. It will be found in the *Starry Cross*, October, 1921, p. 154.

DETERMINATION OF DISABILITY AS TO LOSS OF HEARING, AND THE IMPORTANCE OF VERTIGO

IN INDUSTRIAL ACCIDENT CASES *

HAROLD A. FLETCHER, M.D.

SAN FRANCISCO

A review of the files of the Industrial Accident Commission of California reveals the fact that during the last few years more than $60,000 has been awarded as compensation for disability due to accidents involving the ears. These files convince one that the average specialist either considers his reports to the commission or insurance company as unimportant, or that he has no conception of what is wanted by them.

If a man has an injury of his ears and is to receive compensation for it, a report must be sent to the commission or to the insurance company. The report must give certain facts before the company will pay the compensation. Briefly these facts are:

1. A diagnosis of the trouble.
2. What the cause of the trouble is or was, particularly whether caused by the alleged accident.
3. The loss of function, if any, estimated in such a way (percentage preferably) that the accident commission can rate the man and the man be paid for his loss.

If the specialist will try to fulfil these three things in his reports, the patient and the insurance company will both receive fairer play.

In regard to estimation of the loss of hearing, I find that at present it seems to be pure guesswork. I have found reports on the same case from three different physicians differing as widely as 65 per cent. when each physician was using the same tests.

TABLE 1.—TESTS OF HEARING AFTER CONCUSSION INJURY TO LEFT EAR

Right ear	Left or injured ear
5 meter watch at 3 meters	5 meter watch on contact
Whisper, more than 5 meters	Whisper, 50 cm.
Voice, more than 5 meters	Voice, more than 5 meters
Rinne, plus	Rinne, plus
Air conduction greater than bone conduction	Air conduction greater than bone conduction
Bone conduction normal.	Bone conduction slightly shortened.

Weber referred to right.

Tuning fork test, averaging all forks:

Right	Left
C = 48%	C = 55%
C_0 = 50%	C_0 = 40%
C_1 = 60%	C_1 = 55%
C_2 = 50%	C_2 = 10%
C_3 = 50%	C_3 = 40%
C_4 = 80%	C_4 = 70%
C_5 = 100%	C_5 = 0%
Average, 60%	Average, 40%

Differing from the estimation of the loss of vision there has been, so far as I know, no method of determining the percentage loss of hearing.[1] The recent developments [2] of the audiometer and the electric acoumeter may eventually become practical in this respect We have certain tests on which we base our judgments, namely, the watch or the acoumeter, the spoken voice, the whisper, the Galton whistle, tuning forks, monochord, etc., and the Weber, Rinne, Schwabach and other tests, which give us a line on how much a man hears, and whether it is a middle or internal ear condition. It is difficult, however, to take the results of these tests and fairly estimate what percentage of hearing has been lost.

I believe that there should be some system used in estimating these cases, and that such a system should be universal. I have gradually worked out a plan which I am using and which is best explained if applied to an actual case.

TABLE 2.—ESTIMATION OF LOSS OF HEARING IN LEFT, OR INJURED, EAR

Normal Hearing	Patient Hears	% Loss		Weight		Total
Watch 5 meters	on contact	99.8	×	10	=	998.0
Whisper 5 meters	50 cm.	90.0	×	30	=	2,700.0
Voice 5 meters	5 meters	0.0	×	50	=	0.0
Forks 100%	40%	60.0	×	10	=	600.0
				Total	=	4,298.0

4,298/100 = 42.9, or 43% loss of hearing.

A patient who had a concussion injury of his left ear was tested, with the results given in Table 1.

With these data I roughly estimated his loss of hearing at 57 per cent. in the left ear. I did this by averaging all the tests on an equal basis.

If a man loses his hearing in one ear, he obviously loses 100 per cent. in one ear. If, however, he hears with his injured ear watch on contact, instead of 5 meters, whisper at 50 cm. instead of 5 meters, and hears the tuning forks 40 per cent. of the normal, how are we to arrive at his actual disability? For the watch, his loss is 99 per cent.; for the whisper, 70 per cent.; for the voice, 0; for the tuning forks, 60 per cent. Averaging them gives us 57 per cent. loss of hearing. This is much too high, as the watch tick, which is only one unimportant test, brings up his disability, whereas the spoken voice and the whisper, which are the important things in his daily life, do not show great enough impairment to cause great disability. A machinist who adjusts delicate machinery needs much more accurate hearing than the laborer or mine worker who needs his ears for spoken orders and as a protection for himself and others against dangers. It occurred to me that a scale of weights could be used, rating the man on the different hearing tests, but putting more weight on the important ones. One patient may hear a 5 meter watch tick only on contact, and hear a whisper at 5 meters. Another hears a watch at 25 cm., and hears a whisper only at 2 meters.

By a scale of weights is meant the taking of a total of ten or a hundred as the total for a man's hearing, and then dividing this into different parts according to the importance of the tests as far as his work is concerned. Thus, if 100 is the total, the voice being the most important, 50 could be made the weight for the test, the whisper being next could be placed at 30, and the watch and tuning forks at 10 each. Taking this as the normal we would estimate the foregoing case as in Table 2.

Multiplying the percentage loss by the weight given to each test, and dividing the sum of these by 100, gives 42.9 or 43 per cent. estimated loss of hearing.

* Read before the Section on Laryngology, Otology and Rhinology at the Seventy-Third Annual Session of the American Medical Association, St. Louis, May, 1922.

1. Holt, E. E.: Economics of the Eye, Ear, Nose and Throat, Tr. Am. Acad. Ophth. & Oto.-Laryng., 1914.

2. Dean, L. W., and Bunch, C. C.: Results Obtained from One Year's Use of the Audiometer in the Otological Clinic, Laryngoscope **31**: 137 (March) 1921. Dean, L. W.: Studies in Otology, Using the Pitch Range Audiometer, ibid. **31**: 743 (Oct.) 1921. Bunch, C. C.: Demonstration of Improved Methods of Measuring the Tonal Range, Showing Progressive Development of the Apparatus, ibid. **31**: 760 (Oct.) 1921. Guttman, John: A New Method of Measuring Hearing Power by Means of an Electric Acumeter, ibid. **31**: 960 (Dec.) 1921.

Figuring out the right ear on this basis, we find 8 per cent loss of hearing (Table 3).

In this patient the loss of hearing due to the accident should be based, not on normal hearing, but on what he could be supposed to have heard before the accident. In other words, the hearing in his right ear should be considered his normal hearing. Thus, the loss of hearing due to the accident would be 43 per cent. minus 8 per cent., leaving 35 per cent. loss of hearing in the left ear due to the accident. This I believe to be a much fairer estimate of what this man lost, as far as his disability is concerned in his particular work. It will be noted that I originally estimated this at 57 per cent.

TABLE 3.—LOSS OF HEARING IN RIGHT EAR

Normal Hearing	Patient Hears	% Loss		Weight		Total
Watch 5 meters	3 meters	40	×	10	=	400.0
Whisper 5 meters	5 meters	0	×	30	=	0.0
Voice 5 meters	5 meters	0	×	50	=	0.0
Forks 100%	60%	40	×	10	=	400.0
				Total	=	800.0

800 divided by 100 = 8 per cent. loss of hearing.

The main point to be borne in mind is, that we should have one system by which to figure the percentage of disability, and then use that system in all cases. I submit this not as an absolute final scheme, but for discussion. There is to be decided first normal hearing and then what weight should be given to each of the various tests. Furthermore, a watchmaker or an adjuster for delicate machinery should probably have a greater weight put on the watch tick and the tuning fork test at the expense of the weights on voice and whisper.

VERTIGO

The next point is the symptom of vertigo following head injuries, such as fractured skull and concussion of the brain. These patients often complain of several major symptoms lasting for a long period, namely, vertigo and instability, headaches, weakness, deafness, nervousness and a great many minor troubles. Unless these patients are found to have definite evidence of an organic neurologic condition, they are placed in a class of functional disorders, namely, traumatic neurosis. Until recently the otologist has not been consulted enough in these cases.

The point that interests us as otologists is the fact that quite a number of these cases which are otherwise neurologically negative show very definite evidence of organic disturbance along the vestibular pathways. The neurologic examination, therefore, should not be considered complete without a thorough neurotologic examination. If the examination shows definite evidence of disturbance along the vestibular pathways, these findings may be of the greatest help to the neurologist in differentiating between the functional and the organic cases.

There are certain things to be kept in mind in making a neurotologic examination in these cases. 1. Careful technic must be employed and any abnormal responses must be checked up. 2. We must be guarded in the interpreting of our result. One of the greatest criticisms of these tests, and justly so, is that otologists have attempted to go too far in their interpretations.[3] 3. A great many of these cases show a big neurotic element, and it is well to remember that there have been a goodly number of cases reported in which abnormal reactions have been hysterical manifestations.[4] Malingerers are encountered, and certain responses in these tests can be faked.

REPORT OF CASES

The cases here reported were cases of head injuries which were neurologically negative, and therefore suspected of being functional or true traumatic neurosis, in which positive evidence of organic trouble was found as far as the vestibular apparatus was concerned.

Case 1.—V. S. T., a man, received severe head and body injuries in June, 1918. He was referred in September for rating for hearing. He complained at this time of headaches, weakness and dizziness which had been pronounced a part of a traumatic neurosis by several other physicians. Neurologic examination was reported negative.

Hearing was reduced in both ears, of the nature of middle ear rather than internal ear type.

Neurotologic examination revealed: (1) spontaneous rotary nystagmus to right and to left when looking in those directions; (2) spontaneous past pointing of the right arm 2 inches to the right and of the left arm 1 inch to the right; (3) turning to right, long continued past pointing but correct direction; (4) turning to left, long continued past pointing to *right;* (5) caloric test, right ear, responses within normal limits; (6) caloric test, left ear, past pointing to *right* and a perverted nystagmus; (7) right arm, no past pointing to left on any stimulation.

These responses I believe to be evidence of an intracranial, rather than a peripheral disturbance. These would also be evidence of an organic cause for his complaint of vertigo and instability.

Reexamination in December, 1920, disclosed practically the same abnormal responses except that the spontaneous nystagmus had disappeared.

In May, 1921, the patient still showed the same abnormal responses.

In October, 1921, he still showed the same abnormal responses.

During this time the patient was improving generally as to the neurotic element and ability to negotiate work, and his dizziness bothered him less.

Case 2.—M. W., a man, received severe head and body injuries in April, 1921. He was referred in September, 1921, when his chief complaint was dizziness and headaches when attempting to do even light work; also constant tinnitus of the right ear.

Neurologic examinations by three neurologists were practically negative.

Examination revealed marked impairment of hearing in the right ear of internal ear type, and slight impairment of hearing in the left ear of middle ear type.

Neurotologic examination revealed that: (1) there was spontaneous past pointing of the right arm to the right; (2) turning tests could not be carried out, as the patient could not hold himself in the chair; (3) responses to caloric stimulations were somewhat delayed; (4) stimulation of the right vertical canals caused spasmodic twitching of the body and extremities, which was more marked on the right side; (5) stimulation of the right horizontal canal caused nystagmus to the *right,* and a tendency to conjugate deviation of the eyes to the right; (6) stimulation of the left vertical and left horizontal canals produced past pointing of the *right* arm to the *right,* and subnormal past pointing of the left arm to the left; (7) the right arm could not be made to past point to the left on stimulation of any canal.

Reexamination in March, 1922, revealed practically the same responses, although the patient was still neurologically

3. Weisenburg, T. H.: Traumatic Neurosis in War and Peace, J. A. M. A. 73: 596 (Aug. 23) 1919.

4. Sewall, E. C.: Demonstration of Case of Hysteria Simulating Brain Tumor, Tr. Western Sec. Am. Laryngol., Rhinol. & Otol. Soc., Feb. 23, 1922.

negative. He still complained of dizziness, instability and headaches.

In March, 1922, examination by Dr. F. C. Lewitt revealed practically the same abnormal responses that I found.

CASE 3.—A. W., who received severe head and body injuries in May, 1919, was referred in August as a possible malingerer.

Examination revealed complete loss of hearing in the right ear, and normal hearing in the left.

Neurotologic examination revealed: (1) spontaneous rotary nystagmus to the right on looking to the right, and to the left on looking to the left; (2) spontaneous past pointing 2 inches to the right with the right arm only; (3) turning test: subnormal nystagmus; perverted past pointing of the left arm on turning to the right; subnormal and perverted past pointing of the left arm on turning to the left; falling after turning, much impaired in both directions; (4) caloric test of right ear, reactions absent except that stimulation of right horizontal canal caused a past pointing of the left arm to the *left;* (5) caloric test of left vertical canals, absent, nystagmus and past pointing after five minutes; left horizontal canal, normal responses.

Reexamination in October, 1919, gave findings the same except that there was no spontaneous nystagmus. The Wassermann reaction was positive at this time. A thorough examination by a neurologist at the time was negative. Nothing gave definite evidence that syphilis was complicating the injury.

It is to be noted that Weisenburg [5] has reported a case similar to Case 2 in which the symptoms cleared up on settlement for damages. It was not stated whether later neurotologic examination was made. This is important, I believe, for the reason that as yet we do not know how long these abnormal reactions remain in these cases. Further, we do not know, as yet, the exact relation these responses bear to the symptoms of vertigo and instability in these cases. Lump sum compensation in the true traumatic neurosis case will often clear up a great many of the symptoms.[6] If settlement will clear up the symptoms in cases in which evidence shows central organic disturbance, as in the foregoing cases, then we must revise our ideas as to what constitutes evidence of organic disturbances. These things we do not know yet; but these tests, repeated over long periods, will clear up the question. No matter what the answer, these tests must be considered important and should be made more often in these cases.

CONCLUSIONS

1. More thorough examination, deeper thought and more careful analysis of industrial injuries involving the ears, and more comprehensive reports to the insurance companies should be the physician's endeavor.

2. It is believed that the hearing can be more fairly estimated by a system of weights proportionate to the value of the tests for hearing.

3. The neurotologic examination should be made of all patients with head injuries complaining of vertigo, as the findings in these examinations may be the only evidence by which the neurologist can differentiate the traumatic neurosis from those cases in which there are central organic disturbances.

4. These patients should be reexamined over a period of years, if possible, to determine the relation of the duration of the symptoms to the duration of his abnormal reactions.

135 Stockton Street.

5. Weisenburg, T. H. (Footnote 3); Equilibrium and the Vestibular Apparatus, Arch. Neurol. & Psychiat. 7: 210 (Feb.) 1922.
6. Schaller, W. F.: Diagnosis in Traumatic Neurosis, J. A. M. A. 71: 338 (Aug. 3) 1918.

ABSTRACT OF DISCUSSION

DR. CHARLES G. STIVERS, Los Angeles: With the growth and development of industrial medicine, insurance companies and state accident commissions have demanded that physicians estimate the loss of function systematically and accurately. Otologists are behind in this particular work, as they have not as yet produced any method by which it is possible to estimate the percentage of hearing lost. Offhand, this would seem difficult to do, as our judgment of hearing is based on several different tests, each of which has a different value; but practically it is interpreted in terms of the amount and quality of function required in a given occupation compared to what remains in any given case. This paper is an attempt to arrive at a fair estimate of what a patient has lost. Any method must be purely an estimation; but such an estimation should rule out "guesswork" as far as possible. Furthermore, it should be simple and clear. So far as I know, there has never been any such method produced. This plan would seem to me to be a reasonable and fair one; it is easy to follow out, no matter what the tests used. It has the advantage, furthermore, that the weights used can be changed in certain cases in which a man's occupational efficiency is more dependent auditorially on certain sounds, in the upper, middle or lower tone scale; for instance, in machinists, stenographers, salesmen, watchmakers, musicians and teachers appreciation of the difference in upper and lower tone scale is necessary. The second part of the paper deals with the importance of vertigo following head injuries. If the neurologist can get definite evidence of organic disturbance in the brain in these cases, it helps him to separate these disturbing cases. The importance of careful vestibular examination in such cases is demonstrated in the examples shown. These cases were otherwise neurologically negative. It is to be noted that Dr. Fletcher has not attempted to localize the lesions, but has confined himself to saying that evidence points to an intracranial rather than a peripheral disturbance. This, I believe, is both safe and conservative. Systematic examination of the amount of hearing, as well as eyesight and other evidences of physical condition of all employees, would seem to be necessary to find out what the real loss from injury is in a given case. It might become necessary to have such a record of every employee when starting to work.

DR. JOHN A. DONOVAN, Butte, Mont.: As Dr. Stivers has said, from the economic standpoint you have to put in another factor—occupation. I had a railroad dispatcher sent to me for examination because the chief thought that the man was not able to hold his postion. I suggested that he be taken away from the telephone and be given service as a telegrapher. With a certain kind of voice he was unable to hold his position, but in telegraphy that factor did not come in. Dr. Fletcher is aiming to get under ordinary conditions, with ordinary people, just what hearing they have lost. His propositions appear to me quite reasonable. But the big factor about the paper is that it gives us a key to start working, and in a few years we can arrive at something quite definite.

DR. GEORGE E. SHAMBAUGH, Chicago: This is by no means a simple problem. I have had a good deal of experience in examining patients who were supposed to have sustained injury to the hearing. It is important in such cases to remember, first, that it is a very common thing for people to believe that by feigning a defect in the hearing they will be able to get damages for supposed injuries; another is, that when we come to examine the hearing, even when we are convinced that there is a defect, we must always take into consideration the question as to whether there has been some defect previous to the injury. Dr. Fletcher tries to work out a system by which this can all be checked up. I was stationed at Camp Grant during the most active demobilization period, and I was called to pass on a great many cases in which there was some apparent defect in the hearing, and to determine whether this defect could be the result of war injuries. There are two ways by which the hearing may be injured by traumatism: One is by concussion, that is, explosions near the ear; the other is by an injury from a blow on the head. Now let us consider a moment what is the nature of the injury

to the ear in these two conditions. Concussion may or may not rupture the drum membrane. Explosions near the ear may result in a partial or complete loss of hearing. After an injury of this sort, a partial or a complete restoration of the hearing may take place. When there is a defect due to a fall or blow on the head, we may again have a rupture of the drum membrane or an injury to the internal ear. In cases resulting from a rupture in the drum membrane, only a temporary slight impairment is experienced. The big question in most of these cases is whether or not the head injury has resulted in a traumatism to the labyrinth. My own opinion is that an injury to the labyrinth from a blow on the head is always the result of a basal skull fracture. Such injuries destroy completely and permanently the function of the internal ear so that the patient experiences not only a total loss of hearing in that ear immediately after the accident, but also a marked disturbance of equilibrium, vertigo and nausea. I have never been convinced that a blow on the head can result in only a partial loss of hearing. As far as the intracranial lesions are concerned which may affect the hearing center, these are still more problematic than the supposed injuries to the labyrinth resulting in partial loss of hearing. I studied one case rather carefully at Camp Grant, in which the patient had an injury in the temporal region from a bullet wound, and I was convinced that an injury to the hearing center in the cerebral cortex was the cause of the defect in the hearing.

DR. J. W. CHARLES, St. Louis: I want to disagree with Dr. Shambaugh that a blow on the head causes entire loss of hearing. A young girl fell on the ice. She was not unconscious, but dizzy. She came the following day with a bloody infusion into the middle ear. This promptly cleared up and gave her absolutely normal hearing with no internal ear inflammation. On the day I first examined her there was no discoloration of the skin back of the ear. This appeared the following day and persisted for several days. I was very glad to hear Dr. Fletcher present this paper because I think this subject is one on which we need enlightenment and possibly some way of coming to conclusions on which to base our findings to the industrial commission in accident cases. I had a case of a structural iron worker who was struck on the head by a beam and was unconscious for several hours. He recovered, but still complained of dizziness. Brain tests were normal, but he still complained of dizziness, and certainly it was impossible for him to undertake any such hazardous occupation as that of structural iron worker. Dr. Fry of Vienna was here at the time and I had him see the man. He brought out the point that if the injury had been complete, so that there was a complete loss of function of the labyrinth on one side, the man ultimately could have engaged in his occupation; but since the injury was not complete, but only irritative, the probability was that his dizziness would never disappear.

DR. WILLIAM HOUSE, Portland, Ore.: The neuropsychiatrists are a forgiving group. Years ago the oculists took our headache cases and the gynecologists took the female half of our practice among the insane. Then the dermatologists started to cure our paretics and tabetics, and now it looks as if the otologists were trying to take what little we have left. This time I think that most neurologists are in sympathy with them, believing that they are the right people to make the tests under discussion. The otologist alone has the correlated knowledge of the labyrinth which is essential if one is to make these tests correctly. But I think that we need these tests in relatively few cases. Dr. Fletcher has presented an idea that seems worthy of further investigation. Many patients with head injuries have no neurologic symptoms excepting vertigo. This vertigo is increased by bending the head forward or backward, and I believe that it may be due to alterations of tension of the cerebrospinal fluid. The head-neck articulation is in close proximity to the anterior and posterior cisterns, which are filled with cerebrospinal fluid, and it is quite likely that changes in position may cause alterations of tension which may extend along the sheath of the auditory nerve or possibly to the endolymph of the semicircular canals themselves. Of course, if there is any injury in the region of the canals or at the base of the brain, it could readily influence the sensitiveness of these parts to changes in position. If the Bárány tests are to be used in traumatic cases, care should be exercised. The tests themselves may constitute additional trauma in neuropathically inclined persons, and such results may be construed as due to the original accident. Especially when suit is to be instituted they should be cautiously used or not at all, at least until their value has been determined in traumatic cases not in litigation. I congratulate Dr. Fletcher on giving us a new thought that there may be a relation between traumatic neurasthenia with its attendant vertigo and the vestibular apparatus which may be cleared up by the Bárány tests. I shall try to apply his observations in some of my own cases.

DR. M. A. GOLDSTEIN, St. Louis: As I understand Dr. Fletcher's paper, he is endeavoring to develop a system of calculation of the percentage of hearing. That percentage is possible in some of the tests, as, for example, in the voice, but I am not enough of a mathematician to follow his calculations of the percentage of hearing in the use of the tuning fork. There are no two men who handle the tuning fork alike, and before you can get a definite percentage calculation in the use of the tuning fork you must standardize the tuning forks and their methods of use.

DR. HAROLD FLETCHER, San Francisco: In reply to Dr. Shambaugh, of course this paper presupposes that you have made a careful examination and taken a careful history. In these cases we must take a particularly careful history as this may be of greatest importance in deciding whether the accident caused the deafness. Dr. Shambaugh states that it is his opinion that a blow on the head will cause either complete loss of hearing or no loss at all, with the exception of deafness due to concussion through the middle ear. I think that if one will look over the reports of head wounds during the war one will find that complete or partial loss of hearing has followed wounds of the head without destruction of the vestibular apparatus. I had three of these cases myself. The length of time vertigo remains after destruction of the labyrinth or eighth nerve has been pretty well worked out and is comparatively short. In traumatic neurosis cases, following head injuries, however, vertigo is complained of for as long as three or four years. Most of these cases show no evidence of organic intracranial lesions as far as the neurotologic tests are concerned. Some of them do as in the cases mentioned. These tests, then, are of greatest importance in differentiating between those having an organic basis for the vertigo and those which are purely functional. Certain abnormal responses to these tests have been taken to mean organic intracranial lesions. If the vertigo clears up after settlement in these cases, we shall be forced to revise our opinions. As to the tuning fork tests that Dr. Goldstein mentioned, this of course presupposes that one is making careful tests and one knows one's own tuning forks. The growth of industrial medicine and the compensation of injured employees is making more demands on the medical profession. If otologists report that a man has a loss of hearing due to an accident the commission is promptly going to ask, "What per cent.?" The ophthalmologist has produced methods for estimating loss of vision. It is up to otologists to do the same for hearing; otherwise we are put in a very poor light.

Factors of Safety.—Every normal individual has within himself large factors of safety. If much of the normal margin of safety is consumed before injury, then so much the more readily does the wound produce what is called shock. On the contrary, a soldier wounded soon after his arrival at the front, while he is still fresh, may show no immediate shock—for shock appears only after the factors of safety have been consumed; just as the Marathon runner is not exhausted at the beginning, but at the end of the race. Tens and hundreds of thousands of troops en bloc may be in a state of chronic exhaustion or in a chronic state which predisposes to shock. It may take a serious wound and the lapse of hours to reduce a fresh soldier to the shock level of the battle-exhausted soldier without a wound. There is probably no ultimate difference between the exhaustion produced by the privation and stress of war, and that produced by the bodily injuries of war.—G. W. Crile, "A Physical Interpretation of Shock, Exhaustion and Restoration," 1921.

NEED OF STANDARDS OF TRAINING

FOR SPECIALISTS, GENERAL PRACTITIONERS AND TEACHERS OF SPEECH CORRECTION *

CHARLES G. STIVERS, M.D.

LOS ANGELES

Every one whose practice has anything to do with children realizes that the time is ripe for the development of a program for the study of the problems of defective speech, for about 5 per cent. of all children have some form of speech disorder. Institutions, boards of education and child welfare centers everywhere are asking for physicians to enlighten them on the prevention and correction of speech disorders.

Disorders of speech are increasing, partly because of the great revival of interest in education since the World War, as our system of public school training favors the production of more crowding, more psychoneuroses and more defects of all kinds, including speech disorders. Many foreigners in the larger cities who are learning to speak English at school are forced to speak their native language at home; this conflict often produces some form of speech defect. The World War has been followed by a large number of psychoneuroses, many with some form of speech defect, and this condition has helped to focus attention on the prevalence of speech disorders in adults, and compelled a better understanding of their frequency and importance.

There are about 1,000,000 children with speech defects in the United States, and the problem is a serious one because these children must go to school while having corrective methods applied. But at present there is no agreement among teachers as to the best methods to use, and physicians are not yet, as a body, sufficiently qualified to establish standards of diagnosis, pathology, prognosis and treatment.

In the training of physicians to diagnose and treat these conditions, it is evident that some form of differentiation must be made in the amount and character of the training: 1. What shall the medical college offer the undergraduate? 2. What shall constitute or be considered an adequate amount of time to be devoted by a physician who wishes to become a specialist in speech, and of what particular subjects shall his training consist? 3. How shall teachers of speech correction be trained?

It is suggested that the premedical period of study should contain more psychology, introductory, general and genetic, with a survey of mental development in children and adolescents. Abnormal psychology, including mental deficiency, truancy, mental measurements and the psychology of backward and abnormal children—there are 5,000,000 abnormal children in the United States, according to Lightner Witmer—must also be a part of the special training. Where in the curriculum these subjects can be introduced, in the premedical or undergraduate school, I do not attempt to say. That is a question for a committee to decide. I suggest only what I consider to be necessary training.

The specialist requires, in addition to general knowledge, a much more intensive training than would be necessary for undergraduate students who should be required to know something about the diagnosis, prognosis and treatment of a case of disordered speech, but should not, unless specially trained and of proper original endowments, undertake the cure by corrective training methods. The specialist should be a physician who has had some special training in artistic voice and speech production, and in the diagnosis and treatment of the functional derangement as well as the pathologic conditions of the voice and speech producing organs. The present lack of competent advisers is responsible, in a large measure, for the great number of untrained voice teachers who ruin untold numbers of voices and cut short many a promising vocal career. There are many physicians whose language and temperament unfit them for special corrective work with children with speech troubles. For instance, a foreigner who speaks English with a foreign accent is not a good example for children to imitate. Especially is this true in cases of lisping, substitution and oral inactivity. The specialist should have had in his premedical training a thorough course in psychology, and, in his special work, he should become proficient in the diagnosis and treatment of the diseases of the nervous system, especially in children, and of the affections of the ear, nose and throat, since the psychology of speech is a linking together of the psychology of the phonatory, articulatory, respiratory and auditory systems. Because of the very large numbers of backward, subnormal and deficient children who have defective speech, the training in both normal and abnormal psychology is absolutely necessary for the specialist.

The intelligence tests employed in the World War showed that 45 per cent. of those who were examined, or about one half of the total male population, had a mental capacity or natural ability that would never develop beyond the stage normal to a 12 year old child. They are doomed to remain forever subnormal.[1] As there are many millions of our population who are mentally deficient, every medical graduate should be able to recognize mental deficiency in his practice, for several reasons, one of which is that a large number of subnormal persons have speech defects. It is essential that persons with speech defects be graded mentally in order to do them justice in a social sense, so that the corrective methods applied to them, which may be followed by an anticipated result for speech training, will not be expected either to raise or to lower mental capacity. Medical schools should teach the relation of the teeth to phonetics, the rôle of dental irregularities, and the relation of malocclusion and cleft palate to language ability.

Recent studies reveal speech difficulties in the fields of orthopedics and pediatrics. My investigations show that there are twice as many cases of speech disorder among physically handicapped children as among normal children of school age. The speech training of these children will demand teachers who have special knowledge of physiotherapy and vocational guidance, and a comprehensive knowledge of the application of systematic training as a means of reaching mental levels. Teachers who wish to apply corrective methods should have the following qualifications:

1. They should be graduates of a normal school, college or university in which there was sufficient instruction in normal and abnormal psychology to prepare them for the understanding of the problems of defective speech.

2. They should be naturally endowed with an aptitude for handling nervous children.

* Read before the Section on Otology, Laryngology and Rhinology at the Seventy-Third Annual Session of the American Medical Association, St. Louis, May, 1922, in connection with the film, "Development of Speech and the Use of Speech Drill in Orthopedic Cases."

1. Berman, Louis: The Glands Regulating Personality.

3. They should be quick in auditory perception, should have well trained voices, and should be able to impart their knowledge to others.

4. They should be possessed of poise, patience and a love for the exacting demands of their careers.

5. They should be trained in corrective gymnastics and be able to diagnose the commoner forms of bad posture, notably, faults in spinal alinement and foot and leg conditions, and they should be able to apply their knowledge of corrective exercises in the curing of respiratory and developmental faults.

6. They should understand phonetics both in the organic and the acoustic sense, and they should have some training in diction, dramatics, public speaking, elocution and class management.

We acknowledge the fact that it is better to prevent than to attempt to cure; so it is recommended that large cities have child welfare centers, preferably connected with, or the work supervised by a staff of, a university medical school or hospital. A speech clinic, as an integral part of such a center, should have as director a physician who has been trained as a specialist in the diagnosis and treatment of speech disorders. The consulting staff working with him should consist of specialists: a pediatrician a neuropsychiatrist an ophthalmologist an ear, nose and throat specialist; a dentist with special knowledge of orthodontia; an orthopedic surgeon, and an endocrinologist, who might also be the pediatrician.

Our language, English with American modifications, changes from generation to generation. A word may have one sound today and a totally different one in fifty years, or a modified sound in different parts of the United States, because there never can be any arbitrary standard for pronunciation for the whole country. Our aim, as speech defect specialists, must be to provide a standard of correct speech production, so that the children of today may have the ability to express their ideas in fluent English, and have no hesitation over word utterance. We must cooperate with boards of education to obtain these desired conditions. Accordingly, it would be wise to have a teacher of normal speech associated with a group of speech specialists. The corrective methods should be applied by assistants, either men or women, with the necessary natural endowments already referred to, trained in the practical application of corrective methods, including the reeducation of the deaf.

It will be necessary for those of the medical profession who are now trained as specialists of speech disorders to agree among themselves, after conferences, discussions and trials of methods, on a program for a comprehensive study of the entire field of oral expression. After this is accomplished, they must interest the men in the medical profession, as a body, by showing the need for a better understanding of the problems of defective speech, in a national campaign for better training of all physicians, specialists and teachers. When medical schools realize that the demand exists, they will inaugurate courses in this field, and the training of physicians in this specialty will no longer be subject to the criticism it now merits, because of its lack of recognized, accepted and practical standards. So-called schools which guarantee to cure speech defects, if the students live up to every one of the multitude of rules and restrictions, usually impossible to follow, will be replaced by standardized methods. The stammerer especially will be taught by reeducation and training to adapt himself to his home surroundings, not sent away to be "cured" and then returned to his home to become again a stammerer.

SUMMARY

The time is favorable to the development of a program, by the medical profession, for the study of the serious aspects of, and the correction of, speech disorders.

Five per cent. of all children have speech defects, calling for correction.

Speech defects are increasing, owing to revival of interest in primary education, with overcrowding, competition, psychoneuroses and foreigners.

The World War has produced many psychoneuroses; many with speech difficulties.

The orthopedic and psychiatric fields furnish many cases.

The medical profession, as a whole, is not qualified as yet to establish standards of speech correction.

It is necessary for those now trained in the theory and practice of speech correction to agree on standards, to begin a program of education of the men in the medical profession, and to secure cooperation of educators.

When medical colleges realize that a need exists, adequate facilities for training will be offered to undergraduates, specialists and teachers.

The nature and scope of the training must be determined by committees, conferences and discussions.

406 Auditorium Building.

ABSTRACT OF DISCUSSION

DR. M. A. GOLDSTEIN, St. Louis: This is the first time I have ever had the opportunity of seeing corrective speech demonstrated when it could also be definitely studied with a slow motion camera. I was much impressed in Washington a few weeks ago at the work done experimentally on the labyrinth of animals and the splendid demonstration by the slow motion camera of the removal of the labyrinth under different conditions, and the action of the slow motion camera in the study of this unusual series of changed musculature. I congratulate Dr. Stivers on the philosophy he has presented in the relationship of individual spastic muscle conditions to the general muscle contraction that one finds in so many of the larger groups of crippled children. I should like to know what proportion of the patients Dr. Stivers examined have defects in speech. The medical man in his study of speech defects and their correction not only must consider the mechanical element of correction, but also ought to be a fairly universal specialist in the study of his cases. He must study the psychology; he must know anatomy, physiology and speech machinery; he must know the relation of breathing to the muscles of the mechanics of speech; he must know the peculiar adaptability of the defective child to its defects, and he must know the pedagogy with which these defects are definitely improved. It is not such an easy thing to go into a room where corrective speech patients are being given instruction, make a few observations, and go away feeling that one has studied the situation thoroughly. One cannot make an expert in handling corrective speech cases over night, any more than one can make an expert otologist over night. An expert, whether teacher or physician, should know anatomy, physiology and pathology, besides the mechanics that go into the correction of the speech defect.

DR. ELMER L. KENYON, Chicago: I have had a little experience with the spastic child with reference to the speech problem. The problem is prodigious, and I congratulate Dr. Stivers on having had the courage and intelligence even to attempt to tackle it on a large scale. I should like to ask him to state more definitely what results he is able to get with children who are distinctly spastic in the mouth region. Dr. Stivers' demonstration points clearly to the fact that speech disturbance is not a laryngologic problem alone. Dr. Goldstein

brought out that point. I venture to say that etiologically 90 per cent. of the cases of speech defect have their cause in the brain. They go into the field of the psychologist, the psychiatrist and the child specialist. If we focus our attention too closely on the mere treatment of disorders of speech, we may forget the larger problem, the distinctively medical problem, i. e., etiology and prevention. We are developing a most interesting system in the public schools of treating defects of speech, a most valuable thing; and yet if we are not careful it will be so superficial that we shall have largely to do it over. The foundations of defects of speech have occurred long before the school age. These defects should usually be attacked when they are beginning. It seems to me that we as physicians should endeavor to strive to advance speech problems largely from an etiologic standpoint and a preventive standpoint, and that for the largest success the psychiatrist and the pediatrician must be brought definitely into the problem.

DR. DENNIS J. MCDONALD, New York: Years ago I was one of the commissioners of education in New York and introduced this work in public schools, and today I am much pleased and take new heart because of the work of James Sonnet Greene. He has founded a national hospital for the cure of speech defects. This is a wonderful demonstration we have had today. It is a work for the nation, and for the women.

DR. LOUIS K. GUGGENHEIM, St. Louis: I want to subscribe most heartily to the statement that this is a tremendously important subject; but I want also to sound a note of warning. This work is not for the otolaryngologist. A few years ago, feeling the necessity for some one to do something for these patients, I went to Europe to study the subject, naively ignorant of the size of the problem. I was going to practice otolaryngology, and in my spare time treat speech cases. I opened a clinic at Washington University, and had a sign painted "Speech Defects." Being connected with the ear department, I could spare only three afternoons a week for the speech clinic. I had two patients to begin with; the next week there were five, the next ten, then fifteen and finally I was overwhelmed. This was not because I knew anything about speech defects, but simply because so many persons were afflicted. The thing became a Frankenstein monster, and I had to give it up. The treatment of speech cases is not for otolaryngologists, and I doubt very much whether it is for physicians at all. It is a woman's job. We have neither the patience nor the time. I think that Dr. Goldstein has really solved the problem, and he certainly deserves the support not only of St. Louis but also of the whole country. This demonstration may give an erroneous impression. There are thousands of cases of spastic speech defects that have nothing to do with general spastic conditions; also these patients impressed me as being mentally subnormal children. There are innumerable bright persons who are stutterers, and thousands of orthopedic patients that have no speech defects.

DR. J. A. STUCKY, Lexington, Ky.: Laryngologists have been using too many sprays and too much electricity in the larynx for the correction of speech defects, when the trouble was not there. I should like to ask the author about one point in which I am much interested, and that is about the endocrine insufficiency. What test did he make to determine this? My experience has been that we usually find hypopituitary and hypothyroid conditions, but I am not satisfied with the tests I am making.

DR. CHARLES G. STIVERS, Los Angeles: Not knowing anything about endocrinology, but having in my office an endocrinologist, I turn these patients over to him and he gives them proper examination and treatment. We have in this series two or three cases of endocrine dysfunction, and they are hypothyroid and hypopituitary cases. I limited my statements about speech to the fact that speech production proceeded from stored muscle memories. I did not say that speech began with the motor areas. I said that one can move a muscle only if one has an inherent muscle memory which has been stored in the brain at some previous time. A clearing up of most of the questions will be found in the paper itself, which I did not read. The paper itself is an academic discussion of the need for education of physicians and others who are to take up the work. This film is a practical demonstration of the application. I heartily agree with what Dr. Goldstein said. In the whole treatment of the spastic child I refer to the child who has other expressions of spasticity—not the spastic stutterer, which is a purely central manifestation. The case is first approached by the orthopedic surgeon to make a diagnosis and apply corrective treatment—operations, surgical dressings, braces, etc.—and to get the child into proper condition in which it can be given these exercises for the building up of muscle tone. One of the best results we obtain in the treatment of the mouth and throat is the disappearance of the drooling. This disappears when we build up the tonicity of the mouth muscles. The work is so new and has gone on such a short time that we are not able to state definitely what we can do except with the vowels. We have worked very little with the consonants, because the spastic cases tend to overact and we do not wish to pursue any line of treatment or exercise that would call for any more exercise of the muscles than is absolutely necessary. The speech defect specialist is not only an otologist. He also needs training in otolaryngology and ophthalmology, because speech may be both written and heard. There is also a lot of psychology and neuropsychiatry and pediatrics, as well as study of how to produce articulation that can be interpreted by others, and there one has the problem of knowing something about pedagogy. I am perfectly willing to have young women of the right personality and manner to do the training and merely act as adviser, leaving this active treatment work to the young women themselves.

IS DEATH IN HIGH INTESTINAL OBSTRUCTION DUE TO LIVER INSUFFICIENCY?*

AXEL WERELIUS, M.D.
CHICAGO

Death in acute intestinal obstruction is almost generally conceded to be due to a toxemia derived from absorption of toxic products accumulated in the intestine above the obstruction. The higher the obstruction, the greater the supposed toxicity, and the more rapid the fatal issue. In order to examine this toxic material, segments in various parts of the intestine have been tied or sectioned off. The results are practically the same as in ordinary obstruction.

If the duodenum in a dog is ligated, or sectioned above and below, the animal dies in from twenty-four to forty-eight hours. For several hours subsequent to the operation (sometimes twenty-four hours) the animal shows nothing abnormal; then the symptoms are ushered in rather suddenly with signs of increasing weakness and extreme sluggishness. There is no restlessness, no irritability, no convulsions. The animal lies down and refuses to come when called. It does not seem to suffer. As a rule, after twenty-four hours the temperature becomes subnormal with increased pulse and respiratory rate. Very rarely is there any vomiting, and then only after something has been eaten. Constipation is complete. The outstanding feature is a progressive asthenia.

Death, then, occurs very rapidly and, as above, is thought to be due to absorption of highly toxic products in the loop of the duodenum. If this were the true explanation, there would be some excuse for reasoning that if these toxic products would be drained out of the loop of the duodenum, the life of the animal, if not saved, would at least be somewhat prolonged or, in other words, death would be delayed. However, in

* From the South Shore Hospital Laboratory.
* Read before the Section on Obstetrics, Gynecology and Abdominal Surgery at the Seventy-Third Annual Session of the American Medical Association, St. Louis, May, 1922.

thirty dogs, the loop was drained, and all died within the same period of time with the same symptomatic phenomena as do dogs with undrained loops.

These experiments of draining the loop, if not disproving the presence of a toxemia, at least throw great doubt on absorption of toxic products from the loop as the cause of death. It is doubtful whether very much, if any, absorption takes place in this region of the intestinal canal. It is probably more of a receptor of only partly digested food products not ready for absorption until farther down the intestine, after having been acted on by the bile and pancreatic juice. In other words, there is really not much need for absorption in this area.

In obstruction farther down, absorption does of course take place; but, at any event, the presence of toxic substances in the blood in cases of obstruction has yet to be demonstrated. In four normal dogs, intravenous injection of from 10 to 20 c.c. of blood taken from bowel-obstructed moribund dogs showed no untoward symptoms whatever. Toxemia has been produced by intravenous injection of the contents of an obstructed intestine, and the result in this case has been used in favor of the toxic absorption theory. Undoubtedly the intravenous injection of normal bowel contents will also cause a toxemia.

It is suggested that most of the offending toxin is absorbed from the cells of the mucosa of the obstructed loop. If this supposition is correct, it would explain the inefficacy of draining the obstructed loops. Extract from mucosa of these loops, injected intravenously into normal dogs, should then obviously reproduce the supposed toxemia in bowel-obstructed animals. In three dogs, however, such extracts, injected intravenously, caused not the slightest disturbance. Toxin in sufficient amount to kill the animal is not absorbed from the cells before gangrene has taken place, as the animal can be saved by operation in this period.

The deadly damage must occur, apparently, in the period of gangrene, which would then be a necessity for systemic dissemination of the deadly toxin. That, however, is not so, since animals with drained loops that die with identical symptoms show no sign of gangrene or, in fact, any other pathologic change. Furthermore, absorption from mucosa cells is hardly possible, coffer-dammed as they are either by a bowel wall with complete vascular stasis or a bowel wall disorganized by gangrene.

Ellis,[1] who reviews the entire literature of obstruction research, asserts that he has isolated a toxin from the intestinal contents and from the mucosa of the obstructed loop. The toxin injected intravenously in dogs with no intestinal obstruction reproduces the clinical symptoms of obstruction, which Ellis says are vomiting, retching, diarrhea and tenesmus. I have never seen diarrhea as a clinical symptom of obstruction either in men or in dogs. Constipation, on the other hand, is a constant and universally observed symptom.

The toxin described by Ellis was isolated from the mucosa of the obstructed loop. As the toxin was taken after, or shortly before, death, it was obtained from an abnormal pregangrenous or gangrenous mucosa.

Ellis stated that extract from nonobstructed intestine, that is, from normal intestinal mucosa, did not cause disturbance such as was caused by extract from obstructed intestine. Extracts from normal and abnormal, especially gangrenous, tissues would not be likely to have similar effects. Extracts from gangrenous intestine farther down, or from other gangrenous tissues, should be used as a control. I would not be the least surprised if injection of such extracts would cause clinical and pathologic manifestations simulating those caused by the toxin described by Ellis.

It has been asserted also that the toxin is bacterial and that the action of bacteria on necrotic tissue is the main factor in these deaths. That bacterial activity plays a deciding rôle in acute intestinal obstruction seems exceedingly doubtful because death comes on rapidly in high obstruction in a region practically void of bacteria, and death comes on much more slowly in obstruction of the lower intestine, teeming as it is with a multitude of various organisms. If the action of bacteria was a determining factor, the reverse ought to be true.

Dragstedt[2] and his co-workers, who advocate this theory, washed the loops with either alcohol or compound solution of cresol, aiming to destroy bacteria present. Such treatment should, of course, be most effective in the duodenum, almost void as it is of bacteria. In fact, duodenal loops with both ends open caused no trouble whatsoever in some of the animals, showing conclusively how harmless or nonpathogenic the organisms must be in this region. In spite of this favorable condition for antibacterial treatment, the animals died in about the same period as did those with unwashed loops, that is, in shorter time than in any other region of the intestine—a peculiar result, indeed, if bacteria were playing an important rôle.

To defend the rather disappointing results, Dragstedt and his co-workers suggested that in this high region of the intestine the secretion greatly overbalanced the absorption. This reasoning would fit splendidly to the results in experiments on a lower part of the intestine when all the animals died from rupture of the intestine, but it certainly does not explain the results in experiments on the duodenum when only half of the animals show a rupture at death.

Lower down in the intestine, by washing the loops with ether, life was prolonged not by interference with bacteria, but by delaying overdistention and consequent rupture. Here all fatalities were caused by rupture of the intestine. The washing of loops with ether delayed overdistention, by damaging the secreting cells of the mucosa, inhibiting, or at least interfering with, cell function. Hence there was less secretion and delayed rupture and death.

In some of the animals, undoubtedly, the cells were permanently destroyed. Consequently no overdistention took place, and the animal lived indefinitely.

Dragstedt and his co-workers state that bacterial activity plus necrotic tissue, or the absorption of toxic products resulting from the action of putrefactive bacteria on necrotic tissue, is the important factor in these deaths. This, however, I decidedly dispute.

Dragstedt asserted that necrosis of mucosa favored absorption. In these loops, not only the mucosa but also the entire intestinal wall was necrotic or threatened to become so. As necrosis is a direct result of complete stasis, how could stoppage of circulation possibly favor absorption? In our drained loops, there was absolutely no necrosis; in fact, the intestine was per-

1. Ellis, J. W.: Cause of Death in High Intestinal Obstruction, Ann. Surg. **75**: 429 (April) 1922; abstr. J. A. M. A. **78**: 1665 (May 27) 1922.

2. Dragstedt, C. A.; Cannon, P. R., and Dragstedt, L. R.: Intestinal Obstruction, Study of Influence of Bacterial Flora on Toxemia of Acute Obstruction, J. Infect. Dis. **27**: 139 (Aug.) 1920.

fectly normal macroscopically and microscopically; still the same rapid deaths occurred.

Some years ago I performed the necropsy on an infant, aged 3 days, that died from a complete stenosis in the lower duodenum. Except for this anomaly, the examination was entirely negative. The structure of the duodenum was normal. There was no sign of necrosis, and I doubt whether there were any bacteria; at least there was no visible evidence of their activity.

On practically all Dragsted's experiments, an end to end anastomosis was made behind the loop, reestablishing the continuity of the intestine, thus doing away with the condition for which the research was done, namely, intestinal obstruction. If one studies obstruction, one must obviously deal with an actual obstruction. An isolated loop with continuity of the intestine established beyond is not an obstruction. In such a case with an isolated segment, we remove the most important factor, the interference with peristalsis. Without such interference we have no real obstruction, and conclusions drawn from the work cannot but be erroneous.

Drained or undrained duodenal loops give, as we have seen, exactly similar results; but in draining it was possible to make the interesting and important observation that in about twenty-four hours the bile secretion completely stopped and was replaced by a clear mucoid or, at times, a reddish fluid. In every instance the test for bile was negative. The cessation of bile secretion heralded the onset of untoward symptoms, and from that time on the animal rapidly lost ground, and the fatal issue was not long delayed.

The stoppage of bile was of the gravest possible prognostic significance in every one of the thirty-three animals used. In eight of the animals, bile was drained directly from the gallbladder, and in the others it was drained through the duodenum. Stoppage of bile meant death. It is seemingly a pathognomonic prognostic sign in high obstruction.

What did stoppage of bile secretion signify? Would it not be permissible to suspect that with the cessation of bile secretion all the other functions of the liver were suspended simultaneously? It is very unlikely that the liver just ceased the manufacturing of bile and that its other functions continued undisturbed.

The stoppage of bile rather indicated grave intrahepatic disturbances with possibly a complete standstill of the entire liver activity, in other words, a hepatic insufficiency or a condition that might be termed "ahepatism." Then death would be due to hepatic insufficiency. It is not impossible that other unexplainable deaths following upper abdominal operations might be traced to the same source.

In connection with the stoppage of bile and the suspected hepatic insufficiency, it is interesting and rather confirmatory of this work to read statements from Dr. W. J. Mayo[3] and Dr. Crile.[4]

Crile, in a paper on gallbladder surgery says: "If it is noted that the bile is becoming more scanty in amount and paler in color, the prognosis becomes correspondingly grave." He observed this distinctly in one patient who died.

Mayo says: "I venture to predict that the next few years will bring forth productive research demonstrating that the causes of the changes in vital organs which lead to death do not primarily originate in the nervous system, heart, lungs or kidneys but are the results of a hepatic insufficiency."

What, then, would cause the hepatic insufficiency? Would the tying or sectioning of the intestine cause a reflex inhibition of liver function? No, because anastomosis of the loop into neighboring intestine with gastro-enterostomy saves the animal.

Is a substance (hormone) secreted in this part of the intestine the absorption of which is required to stimulate hepatic activity? No. Resection of this part of the intestine is compatible with life.

Is it the simultaneous loss of bile and pancreatic secretion? No. Resection of the duct-bearing area of the pancreas and the biliary fistula do not cause rapid death.

Is death due to interference with peristalsis? At the root of the whole situation is of course the mechanical obstruction itself. This is one fact we cannot dispute. The obstruction interferes mostly with peristalsis, which is absolutely essential to life; possibly the greater the amount of nonperistaltic intestine, the graver is the danger.

In high obstruction, more intestine is nonperistaltic; therefore the danger is greater. When the entire intestine is nonperistaltic, death is not far off, and even in the lowest obstruction death is preceded by aperistalsis.

By the aid of the fluoroscope, peristalsis is seen at first to be very active in the occluded loop. Later peristalsis becomes less marked and stops completely in from ten to twenty hours. This cessation of peristalsis precedes the stoppage of bile, as a rule, by several hours. It is very possible that the liver needs this peristalsis as a reflex stimulus for its continued activity. Undoubtedly the entire gastro-intestinal system, with the liver and pancreas, is entirely dependent on these muscular waves for continued functions.

Peristalsis below the obstruction seems to stop almost at once. One observes only for some time spastic contractions here and there. Bismuth injected below the obstruction moves very little or, usually, not at all, showing complete aperistalsis.

Injection of the rectum in late cases shows no peristalsis. In fact, aperistalsis precedes death in all cases of obstruction.

Proximal to the obstruction we have noticed a to-and-fro peristalsis covering about 4 or 5 cm. and completing its cycle in about three minutes. A real antiperistalsis was never seen.

Seemingly the duration of life after intestinal obstruction bears a direct relation to the amount of intestine rendered nonperistaltic. In low obstruction, for instance, death comes on more slowly because there is only a small amount of intestine made inactive, that is, less intestine is nonperistaltic. Death is preceded by stoppage of peristalsis of the rest of the intestine. At first the intestine becomes paretic from overdistention; then paralysis sets in.

If the intestine is drained proximal to the obstruction before paralysis has become complete and the paralyzing distention is prevented, peristalsis is again established and life is saved because a sufficient amount of intestine is again made active. If the drainage is low enough, life may be prolonged indefinitely.

The danger of overdistention is a real one in that it causes paralysis of the peristaltic or active intestine proximal to the obstruction, thus rendering the entire

3. Mayo, W. J.: Surgical Significance of Hepatic Incompetency (Murphy Oration in Surgery), Surg., Gynec. & Obst. **33**: 463 (Nov.) 1921.

4. Crile, G. W.: Technic of Gall-Bladder Surgery in Presence of Jaundice, Surg., Gynec. & Obst. **33**: 469 (Nov.) 1921.

intestine nonperistaltic. The Mayos especially recognized this, and in all cases in which the intestine had been subjected to marked surgical insult they averted the dangerous acute dilatation of the bowel by prophylactically instituting an outlet for the distending gases.

From these observations it seems possible that the liver activity might be dependent on peristaltic waves traveling across the upper bowel, because stoppage of bile is always preceded by cessation of peristalsis. If a dog with intestinal obstruction is operated on soon after bile secretion has ceased and the ligatures are loosened, the bile soon reappears, probably with the reestablished peristalsis. This we demonstrated in two animals. It might be possible that cessation of peristalsis causes inhibition of liver function, and death in high obstruction would then be due to liver insufficiency.

CONCLUSIONS

It is doubtful whether death in intestinal obstruction is due to absorption of toxic products from obstructed intestinal contents or from its mucosa.

Bacteria do not play any special rôle in the cause of deaths from obstruction unless rupture takes place, when the bacteria cause peritonitis.

In all drained duodenal loops, bile secretion stops before death.

It is possible that with the cessation of bile secretions all the other functions of the liver stop simultaneously (liver insufficiency).

Acute dilatation of the active peristaltic intestine proximal to the obstruction is the primary danger in acute obstruction of the intestine.

Peristalsis stops before cessation of bile secretion.

Death is always preceded by complete aperistalsis.

It is possible that the amount of intestine rendered nonperistaltic bears a direct relation to the duration of life after the obstruction.

EXPERIMENTAL WORK

Some of the observations recorded were made years ago when Dr. James Moorhead and I did extensive research work on the duodenum for Dr. S. A. Matthews at the University of Chicago.

The present work was done under the most favorable conditions possible, as it was done in one of the operating rooms at South Shore Hospital with the assistance of interns and nurses.

Sixty-five animals were used: Twenty-seven animals with obstruction of part of, or entire, duodenum with drain; nine animals with obstruction of part of, or entire, duodenum without drain; eight animals with separate drain in the gallbladder; three animals with obstruction of the duodenum and jejunum with drain; five animals with obstruction of the duodenum and jejunum without drain; three animals with obstruction in the midgut; three animals with obstruction at the ileocecal valve; three dogs injected with mucosa extract, and four dogs injected with blood from obstructed dogs.

The laboratory examinations, by O. Olson, included urinalysis, observation of temperature changes, leukocyte count, blood sugar determination, blood urea determination, carbon dioxid combining power of blood plasma and tissue examinations. Roentgenologic examinations included fluoroscopy and radiography.

On a series of ten dogs with obstruction of entire duodenum with drain, the foregoing laboratory examinations were made. The rectal temperature invariably fell from an average of 102 F. before operation to an average of from 96 to 97 F. twenty-four hours after obstruction.

Urinalysis revealed albuminuria after operation, and an uncertain reduction of Fehling's solution in some cases.

Other laboratory findings were: a moderate leukocytosis averaging 20,000 after twenty-four hours; in most instances, decreased blood sugar varying from 10 to 80 per cent. of the original amount; an insignificant reduction in the carbon dioxid combining power of the blood plasma, and an invariable increase in blood urea.

Tissue examinations revealed a normal mucosa in the obstructed loop with drain. The liver invariably showed a congestion. Other organs were normal.

The decrease in blood sugar may be explained in the dysfunction of the liver. As the liver is the great reservoir of carbohydrates, its dysfunction resulted in an inability to transform the glycogen into glucose, with a consequent decrease in blood sugar.

The increase in blood urea may apparently contradict the theory of hepatic insufficiency. It is asserted that in acute yellow atrophy there is an increased ammonia content and a decreased urea content in the blood. The increase of ammonia is considered to be due to accumulation, as the liver is not able to convert it to urea.

Recent investigation has shown, however, that the liver is not the only organ concerned in the production of urea as a nitrogenous end product; many other tissues of the body are able to perform this function. Is it not reasonable to suppose, therefore, that an increased ammonia formation would be taken care of by these tissues in the absence of liver function, with a consequent increased blood urea content?

In a case of acute yellow atrophy, which diagnosis was confirmed by postmortem findings, repeated blood examinations were made and a progressively increasing blood urea was observed, the percentage increase corresponding very favorably with our figures.

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ABSTRACT OF DISCUSSION

Dr. Barney Brooks, St. Louis: Dr. Werelius is familiar with the literature, and is therefore familiar with the fact that some of the conclusions he reached are in absolute contradiction to some which I published a number of years ago. I will not take time in discussing points he made with which I am in entire accord, but will call attention to a few facts which I do not believe are in strict accord with one of the conclusions which he has reached. An experimental animal will die from intestinal obstruction, whether the loop be high, whether the loop be low, whether it be isolated from the intestinal tract so as not to interfere with the normal continuity of the intestinal tract, or whether the normal continuity is interfered with. There accumulates within the lumen a toxic substance which can be isolated and which, injected into a normal dog, causes death. This toxic substance cannot be recovered from the normal intestine. It is possible to produce an experimental obstruction in such a manner that the animal may live for a month, and the loop of obstructed bowel may contain many hundred times the lethal dose necessary to kill this animal, without that animal showing symptoms. If, however, this loop of obstructed intestine has its mucosa damaged, the animal succumbs rapidly. I feel, therefore, that we are forced to conclude that, after intestinal obstruction, symptoms and death are due to an intoxication. But the thing I want to call your attention to particularly is that, in order to have an animal show symptoms, the toxin must not only be produced but must be absorbed. I regard Dr. Werelius' observations as an important contribution to the study of intestinal obstruction, because he has brought forward the first evidence of any demonstrable explanation of how this toxin affects the body. Dr. Werelius has brought forward very suggestive evidence that death in intestinal obstruction is accompanied by hepatic insufficiency, and he asks the question, Is death due to hepatic insufficiency? and answers "Yes." I would go one step farther and say, Is the hepatic insufficiency due to an intoxication? and I would answer, "Yes." All experimental work which has been done on intestinal obstruction teaches that the most important thing in the handling of a case of intestinal obstruction is early diagnosis and early surgical treatment. When the lethal dose has been produced within the intestine and

has been absorbed into the circulation, there is at present no known method of saving life. The toxin has already been introduced into the circulation. It has already combined with the liver cell and produced an hepatic insufficiency.

DR. JAMES J. MOORHEAD, Terre Haute, Ind.: I have long been engaged in a study of acute intestinal obstruction in the experimental animal. So far as we were able to determine from a large number of experiments, bacterial activity, plus necrotic tissue, or the absorption of toxic products resulting from the action of putrefactive bacteria on necrotic tissue is the important factor in the rapid death in simple closed intestinal loops. An attempt to immunize the experimental animal against the poison contained in such loops proved futile. It is well known that the functions of the liver are seriously disturbed by experiments such as those mentioned by Dr. Werelius. Some work now going on will probably give us more light on this important topic.

DR. THOMAS G. ORR, Kansas City, Mo.: Drs. Whipple, Brooks, Stone and others have created quite a discussion in the last few years in regard to the cause of death and the toxic element in intestinal obstruction. I have recently become interested in this subject by the study of three cases. The first two were not cases of true intestinal obstructions but gastro-enterostomies. The other case was a straight case of intestinal obstruction. The gastro-enterostomies had very pronounced reactions, with rise in temperature, rapid pulse, dry tongue and everything that goes with that sort of condition. Dr. R. L. Haden made blood and urine studies in these cases. Blood and urine chemistry disclosed that, instead of there being an acidosis, there was an alkalosis. He further found that these patients had retention of chlorids, very much like that found in pneumonia. He found, in addition, that they had a marked increase in the non-protein nitrogen. The significance of the chlorid retention we are not able to determine at present. Whipple, of course, thinks that the toxic substance in intestinal obstruction comes from a protein of some nature. Whipple also thinks that there is a change in the kidney which prevents the elimnation of chlorids. We believe that the chlorids are retained in the tissues, as in pneumonia. In these gastro-enterostomy cases there must have been a partial obstruction to the duodenum. The symptoms lasted only a short time, and both patients recovered and did well after a few days. I think there was some mechanical interference at the stoma, which produced symptoms very much like those of intestinal obstruction. This may give some idea of the nature of the trouble that sometimes occurs in the convalescence after gastro-enterostomy. A few patients have reactions, and others go on and have no more trouble than with the interval removal of an appendix. I believe it quite probable that some very valuable therapeutic points may be found in the study of the blood chemistry of these cases. That is, of course, one of our chief interests. I should not be surprised if the liver is very markedly affected in these obstruction cases, when there is such a toxic element absorbed as we know exists in the duodenum. I should be surprised if all the parenchymatous organs were not involved very materially by this general intoxication.

DR. AXEL WERELIUS, Chicago: Dr. Brooks makes a good objection. He says that in draining the loop one cannot get all the toxin. That is possible, as only a small amount may be required to kill the animal. However, if that should be so, let us trace the poison further. In order to be absorbed, it must pass through the mucosa, and only a small amount is needed. An extract of mucosa of the entire loop must surely contain enough of the toxin. The intravenous injection of such an extract, however, in normal dogs caused no disturbance whatsoever. This surely speaks strongly against absorption from the lumen. Furthermore, so far no one has ever isolated any toxic substance in the blood in intestinal obstruction in man or in animal. Dr. Moorhead says that gangrene of the mucosa favors absorption. In these occluded loops, not only mucosa but also entire bowel wall is necrotic. As necrosis is a direct result of complete stasis, how could stoppage of circulation possibly favor absorption, and, further, in drained loops in which animals die exactly the same, there is absolutely no pathologic change of the duodenum. Consequently, gangrene of mucosa means nothing, one way or the other.

RELATION OF ANESTHETIC TO PULMONARY ABSCESS FOLLOWING NOSE AND THROAT SURGERY*

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During the last few years, there has been so much discussion about pulmonary abscess following nose and throat surgery, especially tonsillectomy, that many surgeons believe lung abscess to be the most important and dangerous complication that may occur. It is my firm conviction that the rate of lung abscess per thousand nose and throat operations is no greater than it was twenty years ago. In considering any complications following nose and throat surgery today, we must not loose sight of the fact that tonsillectomy, in proportion to the total number of operations for all conditions, is far more frequent than ever before. In some hospitals doing general surgery, about 30 per cent. of the total number of operations each year are for nose and throat conditions.

An examination of thousands of cases in which anesthetics are given in nose and throat surgery, especially tonsillectomy, reveals that nose and throat operations are performed not only by the nose and throat specialist, but also by the general surgeon and by the general physician who makes no claim of any specialty. Therefore, we should expect to have more complications.

Only during the last few years has it been admitted that an abscess may and does occur in the lung as readily as in any other part of the body. Richardson,[1] as late as 1912, reported the first lung abscess following tonsillectomy. Osler reported lobar pneumonia as a complication. Abscess of the lung occurred clinically in seventy-six among 12,030 cases (0.63 per cent.); and at necropsy, it was found in twenty-eight of 1,294 cases (2.1 per cent.), a frequency which can by no means be ignored, showing that only about 25 per cent. of the abscesses were recognized before necropsy. During the recent influenza epidemic, lung abscess was a frequent complication. During the last four months, two lung abscesses have been reported to me, one following an operation for intestinal obstruction, the other following an operation for chronic appendicitis.

Dr. Harry Wessler, associate roentgenologist to Mount Sinai Hospital, New York, in 1920 reported twenty-eight cases of lung abscess and gangrene, eight of which followed tonsillectomy.

Following a nose and throat operation, with such symptoms as pain in the lung, cough, chills, irregular temperature and foul sputum, the diagnosis of lung abscess should be easy; in fact, it is hard to see how any one can consider any other diagnosis. If there is any doubt about the condition, the roentgen ray and fluoroscopic examination will clearly reveal the abscess.

CASES REPORTED

Eleven surgeons, whom I interviewed, have treated twenty-four lung abscesses. Twenty followed tonsillectomy, two followed submucous resection of the septum, and two followed frontal sinus operation. Tewksbury has had a total of thirty-five cases. Ten cases were untreated (that is, artificial pneumothorax

* Read before the Section on Miscellaneous Topics at the Seventy-Third Annual Session of the American Medical Association, St. Louis, May, 1922.

1. Richardson, C. W.: Washington M. Ann., May, 1912.

was not produced); six patients died; three recovered, and one was lost track of, so that the results could not be reported. Among twenty-five patients in whom Tewksbury compressed the lung, twenty were cured, one improved, and four died. Twenty-one lesions were in the right lung near the hilum; four were in the left lung near the hilum. Tewksbury informs me that, in producing artificial pneumothorax, he now obtains much better results by injecting a smaller volume of gas at each sitting than he first used.

Kendlemen [2] reports two cases. Lewis [3] states that he has had seven clinical cases. Thomas Klein reports one case. Fisher and Cohen [4] reported seventy-three cases last year; five of the patients were admitted to their services after operation had been performed elsewhere. The other case reports had been compiled by: Bossin, nineteen cases; Manges, ten cases; Frank, eighteen cases; Tewksbury, fifteen cases; Dodd, two cases; J. W. Williams, one, and Clendenning, one. Porter reports two cases of lung abscess following local anesthesia.

The total number of cases reported above is 145, but twenty-one cases have been reported both by Tewksbury and the operator, so that this leaves a net total of 124 patients having pulmonary abscess following nose and throat operations. In thirty-three cases the right lung was involved twenty-seven times, and the left lung six times. The right lung is involved much more frequently than the left because the right lung is larger, and because the right bronchus is larger and straighter than the left, so that the entrance for the infected material in the right lung is more direct and easier than in the left lung.

My paper had been completed when Moore [5] published an analysis of 202 cases of pulmonary abscess following operative work about the upper respiratory passages. I refer to his analysis because the conclusions are very similar to mine. He reports the anesthetic used as ether, 151 times; local, thirty-nine times, and gas, eight times. When patients were treated in the upright position, ether was used twenty-nine times, and local anesthesia, thirty-nine times. In about 70 per cent. of the cases, the right lung contained the abscess. Suction was not used in ninety-three cases; this, to me, seems inexcusable. I infer from his reports that no one is attempting to sterilize the mouth, pharynx and tonsils. Now that the ice is broken with a report of thirty-nine cases under local anesthesia, we may expect treatment to be more impartial and intelligent. Allowing for duplications, we have about 300 cases in the two reports.

DANGER OF LOCAL ANESTHESIA

Local anesthesia per se, especially when cocain is used, is more likely than nitrous oxid-oxygen or ether anesthesia to cause the sudden death of the patient during the operation. The committee on the advantages and disadvantages of the various local anesthetics,[6] composed of Mayer, Skillern and Sonnenschein, report twenty immediate deaths from local anesthesia, two from nose operations, and eighteen from throat operations. Such a large number of deaths from local anesthesia, for what many consider minor operations, cannot be lightly passed.

French [7] reports that a girl, aged 12 years, met death in forty seconds from a hypodermic injection of 12 drops of a 4 per cent. solution of cocain.

Gibson [8] reports a case of poisoning occurring after two applications of a 2 per cent. solution of cocain to the throat and tonsils. Last summer a New York daily newspaper contained the news item: "Mrs. H., a young woman 28 years of age, died on the operating table during an operation for removal of the tonsils under local anesthesia, from uremic convulsions." The probable cause of the convulsions and death in the foregoing case was cocain poisoning.

A large number of sudden deaths have been reported from injection of cocain solution in the urethra to pass sounds or cut a stricture, and death even has resulted from a few drops of 5 per cent. solution of cocain, dropped in the eye for some minor operation.

With these facts undisputed, many still assert that local anesthesia is safer than ether or nitrous oxid-oxygen anesthesia. The literature nowhere contains any such number of sudden deaths from ether or nitrous-oxygen anesthesia, during nose and throat operations. A live patient with lung complications following ether anesthesia is better than a dead patient following cocain anesthesia.

TYPE OF ETHER ANESTHESIA TO BE USED

It is admitted by those advocating local anesthesia that ether anesthesia per se does not cause pulmonary abscess; also, it is well known that lung complications occur most frequently when ether anesthesia is used. In explanation, there are a number of conditions to be considered. The first is deep ether anesthesia. In nose and throat surgery, only light ether anesthesia is required, and yet one frequently sees the patient profoundly narcotized with the pupils widely dilated. Such a condition makes it easy for blood and infected material to be carried into the lungs, especially the right lung, by inspiration. When the reflexes are completely abolished, there is nothing to prevent fluids from entering the larynx and lungs, and nothing to warn one that they are doing so. With the reflexes not abolished, when fluid enters the larynx, the patient will attempt to expel it. In other words, why do we cough when not anesthetized? Because there is something in the bronchi which we wish to expel. We know that if a body is removed from the water shortly after drowning, the lungs will not contain water; on the contrary, if the body is placed in the water after death, the lungs will contain water, because there were no reflexes to protect them.

Another condition that invites aspiration under deep anesthesia is having the head level with the body or elevated, so that there is nothing to prevent blood and mucus from entering the larynx. During a tonsil operation, when the patient is wearing a tracheotomy tube, if the head is not lowered and blood is allowed to collect in the pharynx, some of the blood will be expelled through the tracheotomy tube.

CONDITIONS THAT MAY CAUSE LUNG ABSCESS

Those methods of operating that unduly tear and crush the tonsils, thus filling the pharynx with caseous material, and not infrequently liquid pus, aid in producing lung abscess. Also, it is admitted by all that the

2. Kendlemen, W. H.: J. Iowa State M. Soc., June, 1920, p. 168.
3. Lewis, Dean: J. Iowa State M. Soc., June, 1920, p. 170.
4. Fisher, Lewis, and Cohen, A. J.: Pulmonary Abscess in Adults Following Tonsillectomy Under General Anesthesia, J. A. M. A. **77**: 1313 (Oct. 22) 1921.
5. Moore, W. F.: Pulmonary Abscess, J. A. M. A. **78**: 1279 (April 29) 1922.
6. Mayer, Emil; Skillern, R. H., and Sonnenschein, Robert: Anesthesia in Nose and Throat Work, J. A. M. A. **75**: 315 (July 31) 1920.
7. French, J. M.: Am. J. Clin. Med., June, 1908.
8. Gibson, A. G.: Lancet, Feb. 26, 1910.

mouth and pharynx comprise one of the most extensively infected fields for an operation, and yet but few make any attempt to cleanse and sterilize the teeth and tonsil region. There was an epidemic of lung abscess following the recent influenza epidemic. There were more lung abscesses during 1919 than during several years preceding the influenza epidemic. At that time, the hemolytic streptococcus was the prevailing organism found in the tonsils. Nichols and Bryan[9] recovered hemolytic streptococci from the crypts of 75 per cent. of 100 pairs of extirpated tonsils.

Cajigas,[10] in 1919, found hemolytic streptococci present before operation in 170 out of 200 cases, or in the tonsils of 85 per cent. of the patients examined. Many observers have found hemolytic streptococci present in normal throats in from 4 to 30 per cent. of patients examined. It is possible that, if more attention were given to streptococci infection of the tonsils, the result would be a smaller number of lung abscesses.

ORIGIN OF LUNG ABSCESS

Is lung abscess due to aspiration or embolism? It is an undisputed fact that many lung abscesses, both in operative and nonoperative conditions of various parts of the body, are of embolic origin. It would be very convenient if we could feel as sure as Fisher and Cohen that lung abscess following nose and throat surgery is of embolic origin, for then it would make little difference if local or any one of the various forms of general anesthesia should be used. It is difficult to see how the cause can frequently be other than aspiration, when we consider that, out of thirty-three cases, the right lung was involved near the hilum twenty-seven times. Embolic abscess is most frequently found near the edges, rather than the center of the lung. When all facts are taken into consideration, we must conclude that lung abscess is caused both by aspiration and by the infective embolus, carried to the lung by the blood stream or lymphatic system.

It has been my aim in this brief paper not to try to disprove the occurrence of lung abscess, but rather to present evidence that lung abscess does occur, and far too frequently. For this condition, the anesthetist, the surgeon and the methods of procedure used, rather than the anesthetic, are to blame.

HOW TO PREVENT LUNG ABSCESS

1. A patient should not be operated on within seven days after an attack of tonsillitis, or when there is acute bronchitis or a fever from any cause.

2. The patient should be in the hospital at least six hours, or better, twenty-four hours before operation.

3. The mouth and teeth should be thoroughly cleansed, before the operation, with some antiseptic solution.

4. Only light anesthesia should be used.

5. The head should always be down, and by suction the pharynx kept free from infective material.

6. The tonsils and pharynx should be painted before operation with 50 per cent. tincture of iodin; also the cavity should be swabbed with iodin after removal of tonsils.

7. Bleeding should be stopped at once by suture or ligature rather than prolonged sponging, thus reducing the anesthesia and obtaining a dry pharynx.

8. In all nose and sinus operations, a posterior nasal plug should be used.

9. The patient should be returned to his room on his side, with the head down.

10. After operation, the foot of the bed should be elevated until the patient has fully reacted, unless the patient has high blood pressure.

11. Last, but not least, nose and throat operations should receive the same care and skill by both the surgeon and the anesthetist as are given to an abdominal operation; and there will be fewer lung abscesses to report.

9. Nichols, H. J., and Bryan, J. H.: The Tonsils as Foci of Infection in Streptococcus Hemolyticus Carriers, J. A. M. A. 71: 1813 (Nov. 16) 1918.

10. Cajigas, Thomas: Bull. George Washington Univ., October, 1920.

ABSTRACT OF DISCUSSION

DR. A. H. MILLER, Providence, R. I.: The most common cause of lung abscess in general is pneumonia, and lung abscess frequently follows postoperative bronchitis or pneumonia. For these reasons we cannot consider postoperative lung abscess separately from other pulmonary complications. In the pulmonary complications occurring in the lower lobes and following operations on the upper part of the abdomen, the infection may be carried through the lymphatics. In multiple postoperative complications the condition may be embolic. But in the majority of the cases we believe that the pulmonary complications are of inspiratory origin, and as a result of inspiration of infectious material either bronchitis, pneumonia or abscess may develop. We find these complications following every type of anesthetic and any class of operation. There are conditions which favor the occurrence of these complications. One surgeon reports a series of lung abscesses during a limited period, while other surgeons will have no such cases. In searching for the cause of these conditions we are concerned with the depth of anesthesia, the position of the patient, the preparation for the operation, and the use of suction. There is a difference of opinion as to the value of suction in throat surgery. I note that, as time goes on, surgeons use the suction apparatus less and less. The reason is that with the improvements in operative technic they need it less and less. A factor of the greatest importance is the depth of the anesthesia. With profound anesthesia, protective reflexes are abolished and the respiratory passages are laid open for the entrance of infectious material. With a light depth of anesthesia, postoperative pulmonary complications very rarely occur. Another important factor is the manipulation of the jaw. I believe that many pulmonary complications have been due to the practice of pulling the jaw forward when the patient attempted to vomit. Drawing the jaw and the tongue forward opens the respiratory passages for the entrance of foreign material. I believe that these two factors, profound anesthesia, and manipulation of the jaw, are responsible for most of the postoperative lung complications.

DR. R. S. ADAMS, San Antonio, Texas: I am sure that after having heard these two papers, and Dr. Miller's discussion, we can all be assured that the term anesthetic or ether pneumonia will soon be a thing of the past. Chilling of the body surface is one of the most important factors in this connection. The average patient is accustomed to heavy sleeping garments. He is given a thin nightshirt that does not cover the upper part of the chest, and is repeatedly exposed for preoperative preparation, examinations, etc. He is then transported through a drafty elevator shaft or chilly hall to the operating room, and if, in addition, he is placed on an operating table that is not kept warm, and cold, moist packs are allowed to remain in the abdomen, and an excess of mucus accumulates, we can readily see why 2 per cent. of all patients operated on develop these complications. Henle, in 1901, made an exhaustive report on the lung complications following 1,786 abdominal operations. Local anesthesia was used extensively, and he noted an increased morbidity but lessened mortality. In patients suffering from asthma, chronic bronchitis or emphysema, or in those in whom infection was coexistent, the morbidity and mortality were increased. Animals were anesthetized with ether and soaked with cool water; the control animals were anesthetized and

placed on vacuum pillows. The lungs of the chilled animals showed a general hyperemia, swelling and desquamation of the alveolar epithelium, and when sputum containing the pneumococcus was placed in the trachea, those chilled all developed pneumonia, while the reverse as to lung findings and pneumonia was found in the control series. Even at this early date, Henle mentioned the possibility of emboli from the operative field traversing the lymphatics and veins to the lungs. Whipple thinks that the aspiration into the bronchioles of mucus which had become laden with germs from the mouth and tonsils was the most frequent cause of postoperative pneumonia, and considered the Type IV pneumococcus the usual offending organism. Whipple emphasized the value of the roentgen ray in arriving at an early diagnosis of lung complication. The work of Cutler and Hunt, and more recently of Cutler, elaborating on the embolic theory of pneumonia, is attractive. I should be inclined to believe that those cases of pneumonia coming on within forty-eight hours after the operation were usually of the aspiration type, while those occurring later could more properly be classed as embolic. Lemon, in reporting on eighty-one cases of lung abscess, found that seventeen were postoperative, and of these seventeen, twelve followed operations on the nose and throat. I believe, with Dr. Chipman, that the method of anesthesia is of prime importance in tonsil surgery, as advantage should be taken of the electric motor vapor and suction apparatus, thus permitting of a light, even plane of anesthesia, most of the mucus and blood being removed, thus minimizing the dangers of aspiration. When the face mask is reapplied several times in nose and throat surgery, an uneven plane of anesthesia ensues, causing greater danger of aspiration. I hope that the time is not far distant when every one connected with the operation will realize that the anesthetic and method of anesthesia comprise only one of many factors bearing on postoperative pneumonia and lung abscess.

Dr. Frances E. Haines, Chicago: I agree with practically everything that has been said. I have never seen pulmonary abscess or pneumonia following nose and throat surgery. The Chicago men whom I have consulted never had a pulmonary abscess. They all use the ether vaporizing and suction machine sometimes in clinic cases, but not much in private cases because they operate rapidly. They all agree that pulmonary abscess is due usually to inspiration of septic or foreign material; in practically all cases, therefore, it is due to carelessness. The semirecumbent position is never used by these men: dorsal position for general anesthesia, and sitting erect for local anesthesia. Dr. Shambaugh has an assistant turn the patient on the side immediately at the close of the operation. Drs. Pierce and Theobold emphasize that anesthesia should never be too deep or too light. A light anesthesia should be employed. Our ether patients are so lightly under the anesthetic that they attempt to crawl off the cart when returning to the room. The outlook is hopeful, since the vast majority of cases are due to aspiration. If the surgeon and anesthetist will watch and protect the larynx, pulmonary abscesses will result only rarely.

Dr. Edwin McGinnis, Chicago: Cocain anesthesia is dangerous unless care is used. Dr. Chipman mentioned 2, 5 and 10 per cent. solutions. I use 20 per cent. and sometimes the flake cocain. I am in the habit of telling students that the weaker solution is the more dangerous in that the surgeon using a weaker solution of cocain thinks he is safe and does not take into consideration how much solution he uses. The thing that does the anesthetic work is the cocain itself. I had one unfortunate death from local anesthesia, and we never determined whether we injected the cocain or whether some complication caused death. I do not use the suction apparatus in tonsillectomy. I use the original Sluder tonsillotomes. On one I had a catch put so that I could run it down and set it in any position I desired. We very often have acute tonsillitis following nasal operations. If I have a patient needing a tonsillectomy and a nose operation, the tonsillectomy is done first. Dr. Herb saw an experimental animal in which we had produced an acute pneumonia and acute nephritis. The staphylococcus from skin infection or osteomyelitis will produce abscesses in the internal organs. The cervical adenitis cases that break down, the few that we have been able to follow up bacteriologically, have been infections with *Streptococcus hemolyticus*. From the work that we have done, it does not seem possible that a lung abscess could follow an operation on the nose unless we get a tonsillitis with the invasion of *Streptococcus hemolyticus*. I also do bronchoscopic work. It has always been our experience that in almost all the foreign body cases in which the object was not removed within a month or six weeks following the accident we got some purulent conditions in the lung in the region of the foreign body. In the early days the foreign body cases were not diagnosed. Often they were present in the lung six or eight years. All of those patients had a lung abscess. A woman had a tonsillectomy done in Indiana recently. She warned the anesthetist that she had a pivot tooth. On awaking her tooth was gone. They decided that the tooth had been swept up and thrown out with the refuse. Six weeks later she developed a cough and râles in the right side of her chest. She went through various government hospitals, and finally it was decided to send her to Arizona for pulmonary tuberculosis. Some one suggested that the roentgen ray be used. They found the pivot tooth in the right bronchus. She had an abscess cavity 2 inches in diameter, and the tooth was at the bottom of it. Efforts to remove it failed. During the night she had an attack of coughing, and the tooth came up with a large amount of mucus. She made an uneventful recovery.

Dr. Logan Clendening, Kansas City, Mo.: This is the most important problem that the anesthetist has today. I see on an average one case a week following nose and throat operations. The anesthetist or the nose and throat man does not always know that his patient has developed a pulmonary abscess. The symptoms develop as late as two weeks afterward. The anesthetist or laryngologist hears that the patient has left the hospital, but has developed "a cold" or has "influenza," and is under the care of a general practitioner; but not until two or three weeks later is the case definitely recognized as a lung abscess. I am very much interested in the embolic or inspiratory origin of these things. There is no question that there are embolic abscesses. I have seen patients with abscesses of the cervical lymph glands develop a double femoral phlebitis, abscesses in both lungs and finally die. We found at necropsy multiple abscesses in the lung, pericarditis, double pleural empyema and double femoral thrombophlebitis. Embolic abscesses are usually of that kind. They are multiple. The ordinary abscess that follows tonsillectomy is of a different character. It is usually single, in the lower lobe of the right lung. I have had one experience which seems to me to demonstrate the fact that the origin is inspiratory. We had a patient who on the second day after tonsillectomy had a temperature of 100 F. and on the third day, 102 F., with a patch of râles in the back. The next day the temperature was normal. The patient had coughed up in the night a clot about the size and shape of a small secondary bronchus. She had inspired that septic blood; it had clotted in her bronchus, and in a short time would have infected it. I believe that the origin of lung abscesses following throat operations is inspiratory in most cases. It is the safest view to take, rather than to comfort oneself with the doctrine of an embolic origin. As to prevention, all our efforts should go toward preventing those conditions which favor the inspiration of septic material. I am not committed to the doctrine of accusing your favorite motor driven anesthesia apparatus, though I am still unconvinced that those machines are entirely innocent. I believe that the depth of anesthesia is a most important factor; also the position of the patient, and all those other things that may have to do with the inspiration of septic material. If we work on the basis of that doctrine we shall arrive at the nearest approximation to success in the prevention of these abscesses.

Dr. E. I. McKesson, Toledo, Ohio: There can be no doubt that there is an embolic origin of pulmonary complica-

tions. That there is the aspiratory cause of complications is also certain. I want to call attention to one point. In the administration of cocain or local anesthetics in tonsil work I believe most of the cases are injected. We are constantly being surprised by the discovery of abscesses around the tonsil. The introduction of the needle through this abscess, unintentionally, and then injecting the contents of the contaminated eye of the needle directly into the blood stream, is a possible cause of embolic abscesses.

DR. C. N. CHIPMAN, Washington, D. C.: There is one thing that I cannot emphasize too strongly, that is, the early diagnosis and treatment of these cases. Tewksbury, to whom I referred, and who limits his work to the lungs, has found that if these cases are obtained early and the lungs are compressed, from 80 to 90 per cent. will be cured. It is really appalling to see the number of men who make no attempt to cleanse or sterilize the mouth. Patients come to the operating room with their teeth and mouth filthy. We can at least have the teeth and mouth cleansed, and paint the tonsils and peritonsillar region with tincture of iodin before the operation and swab out the cavities with the same solution after the tonsils are removed. I feel that if more attention is given to sterilization of the mouth, we shall have fewer cases of lung abscess.

SUPRARENAL GLAND IN ANESTHESIA*

J. F. CORBETT, M.D.
MINNEAPOLIS

It has been a common observation that certain patients do badly under ether anesthesia. Especially is this true in cases of typhoid; in starvation; in severe infections of all kinds; in late intestinal obstruction; in patients suffering from shock, and in persons who have either acute or chronic secondary anemia due to hemorrhage. In addition, one hesitates to use ether in cases of exophthalmic goiter. On the other hand, with nitrous oxid one can operate with comparative safety, and I believe that nitrous oxid has an advantage, in my hands at least, over local infiltration. Therefore I have attempted to analyze the underlying principles on which these statements have their foundation. First of all these agents, nitrous oxid seems to do least harm. Why it does least harm it is the purpose of this paper to explain from data collected for the purpose.

From the list of diseases I have enumerated it would seem that, if something could be found in all of these conditions to be common, and if this something was also a result of prolonged etherization, a satisfactory explanation could be reached. A research that I undertook at the University of Minnesota shows that there is one thing at least common to all of the conditions mentioned above. This one thing is epinephrin exhaustion. We have varying degrees of epinephrin loss in shock, in hemorrhage, in typhoid, in fright, in starvation, in infection and in prolonged etherization.

Epinephrin exhaustion of the suprarenal glands comes alone through explosive output of epinephrin. These explosive outpourings of epinephrin are clinically evident in certain forms of exophthalmic goiter, although I do not possess absolute data as to the epinephrin content of the suprarenal glands in this condition. Vasomotor balance is maintained ordinarily by minute amounts of epinephrin normally in the blood. Intense vasoconstriction may be brought about by increased amounts of epinephrin in the blood stream.

In hemorrhage, there is a relation between blood pressure, blood volume and vasoconstriction. For example, I had a patient whose systolic blood pressure was 120; diastolic pressure, 70; hemoglobin, 45, and pulse rate, 140. This patient was in no apparent danger. She was intensely white. She was white because she had an intense vasoconstriction. This patient was putting out large quantities of epinephrin to maintain the vasoconstriction. The volume of blood was very small, but rapid pulse and vasoconstriction compensated for the circulation. Had we allowed the patient to progress, even though no more bleeding occurred, she in all probability would have collapsed, without apparent cause, when the epinephrin was exhausted and vasoconstriction failed. Blood transfusion was performed, and the patient operated on under gas anesthesia. At the conclusion of the transfusion, the hemoglobin was 60 and the patient had received only 380 c.c. of blood; the systolic blood pressure was 120, and the diastolic blood pressure, 80. It is apparent that the blood volume was small. At the end of twenty-four hours, the systolic blood pressure was 100; diastolic, 55; hemoglobin, 44; but the face was more ruddy and vasoconstriction was less active. I have repeatedly seen collapse in patients who after some time were not bleeding, but who had bled and maintained a balance until vasoconstriction failed. In other words, epinephrin exhaustion had occurred. Those patients having compensation do not die until the compensating agent has been exhausted.

No one seems to know what shock actually is. The work of Malcomson and of Seelig and Lyon shows that a general vasoconstriction and reduction of blood volume occur. Yandell Henderson tells us that shock is due to the escape of fluids through the vessel walls, and that these fluids are lost as in hemorrhage. In shock, the circulation is compensated for just so long as vasoconstriction is maintained, and in some measure in proportion to that function. When vasoconstriction does not compensate, fall of blood pressure and, at length, collapse occur. Epinephrin maintains the vasoconstriction, and more than the usual output is needed. The residual reserve of epinephrin in the suprarenal glands is finally used up in traumatic shock, and when it is, death occurs.

In a study of experimental and clinical shock, I was so impressed by the similarity in the pictures presented by victims of shock and animals from whom the suprarenal glands had been removed that I decided to make a study of the suprarenal gland. With this purpose, I performed 350 animal experiments. I made a study of the residual epinephrin in the suprarenal gland in animals subjected to various procedures or dying from various causes. The epinephrin determinations were done according to the method of Elliot; that is, by means of physiologic standardization. This method, when carefully controlled with standard epinephrin, is reliable. As a result, I found epinephrin to be exhausted in the list of cases in the accompanying table. From these data, one might be led to infer that etherization, and not trauma, was responsible for the low epinephrin content of the glands in this series. However, I had the opportunity to examine the suprarenal glands from subjects of shock who had never been etherized. In three such cases there was low epinephrin content, but not complete exhaustion. I do not believe that epinephrin exhaustion is shock, but I believe that, when there is an exhaustion of that element, there is nothing with which shock can be con-

* Read before the Section on Miscellaneous Topics at the Seventy-Third Annual Session of the American Medical Association, St. Louis, May, 1922.

trolled unless we increase blood volume by transfusion, and obviate the necessity of intense vasoconstriction. This fact was further emphasized by the extreme epinephrin exhaustion following nerve stimulation. Shock does not manifest itself after long continued nerve stimulation in animals having a low epinephrin content. However, such animals go into shock almost immediately after the abdomen is opened with slight trauma. That is, there is nothing left to combat shock.

I further found that etherization alone greatly exhausted the suprarenal glands. This was in some measure controlled by morphin, but not absolutely. Nitrous oxid did not to so great a degree in itself cause epinephrin exhaustion. I believe that the use of nitrous oxid is safe not in that it protects the nervous system from trauma, but in that it does not per se exhaust the suprarenal glands, and in that it removes the element of fright. Nitrous oxid improperly given, and especially when not safeguarded by morphin and atropin, does exhause the suprarenal glands. It is of interest here to state that we often got a blood pressure tracing similar to that obtained on vagus stimulation, when no atropin was used. These experiments showed epinephrin exhaustion. Scopolamin-morphin anesthesia also exhausts the glands.

EPINEPHRIN CONTENT OF SUPRARENAL GLANDS

Condition	Epinephrin Content Per Cent.
Normal; instant death by magnesium sulphate	100.00
Infection; postmortem	0.03
Typhoid	0.03
Jaundice, obstructive; in vivo	0.80
Peptone*	0.15
Anaphylaxis*	0.36
Intestinal obstruction; postmortem	0.07
Intestinal obstruction; in vivo*	0.33
Rabies	0.01
Diphtheria	0.02
Pneumonia	0.17
Hemorrhage	0.26
Sciatic stimulation	0.10
Thyroidectomized cat*	0.55
Peritoneal trauma; ether	0.09
Peritoneal trauma; morphin	0.25
Brain trauma	0.25
Cutting cord, sympathetic nerves stimulated*	0.70
Peritoneal trauma; death; visceral nerves stimulated*	0.25
Suffocation	0.28
Chloroform; immediate death	0.76
Chloroform, one hour	0.35
Chloroform, four hours	0.28
Ether deaths, primary anesthesia	0.06
Ether, one hour	0.33
Ether, four hours	0.24
Ether-morphin, four hours	0.40
Ether-morphin, fifteen minutes	0.60
Ether-morphin, operative trauma, four hours	0.34
Ether-morphin, quinin-urea urethra blocking, four hours; operation	0.35
Nitrous oxid, four hours	0.65
Nitrous oxid, vagus stimulation, four hours	0.10
Nitrous oxid, scopolamin-morphin, four hours	0.40
Local procain-quinin and urea	0.27
Local procain-quinin and urea, morphin	0.70
Alcohol-chloroform, four hours*	0.18
Fright	0.13
Morphin-ether: operation, five hours; recovery in four hours; content after twenty-four hours	0.29
Morphin-ether; operation, five hours; recovery in four hours; content after forty-eight hours	0.40
Ether; operation; trauma; recovery in four hours; content after twenty-four hours	0.26
Starvation (Elliot)	0.50

Fright is one of the greatest agents we have in epinephrin exhaustion. I believe that it is for this reason that depletion of the epinephrin content in the suprarenal glands occurred in our animals with local anesthesia, in spite of the fact that all animals operated on were handled as gently and diplomatically as we would handle a patient in the hospital. Most patients can go through local anesthesia operation without pain. They may smile, but it has been my observation that after operation the facies changes. The change in appearance suggests shock. Further than this, I have seen shock follow operation with local anesthesia. This usually develops some time after operation and, as Harris says, "the patient flattens out." I do not believe that ether is quite as dangerous as we are told. For instance, I have performed about 200 operations on the injured arms and legs of soldiers. These are long, tedious operations requiring from two to five and one-half hours. The work was done under ether. In the service, there were no deaths, and in only one instance was there approach to a mild shock. These persons were in good health except for the deformity, and had a good epinephrin content. Had the epinephrin content of the same persons been depleted by some of the agents mentioned above, they would not have stood the ether so well.

I am submitting a table for study and analysis. I cannot detail all of the combinations and conclusions one might make, but should prefer to leave it with the reader for study and deduction. It gives a physical explanation for many things we know to be true from clinical observation.

The figures in the table express the percentage of epinephrin obtained from the suprarenal glands of animals subjected to procedures as indicated. The content of normal glands obtained from animals instantly killed with magnesium sulphate was taken as 100 per cent. Each figure represents, in all but seven instances, ten or more experiments. A star indicates the cases in which less than ten experiments were done.

ABSTRACT OF DISCUSSION

DR. NETTIE KLEIN, Texarkana, Texas: Dr. Corbett did not give any one cause as producing shock, and while the causes will gradually increase in number we are still in the experimental stage as to the epinephrin content of the suprarenals under anesthesia and in shock. The interrelation of the endocrines is so close that it is hardly possible to have a pathologic condition arising in one gland without some disturbance in the other gland. Whenever an animal survived a longer time, necropsy often disclosed hypertrophy of the accessory glands. Compensating hypertrophy explains the variability of the time of survival in some cases when animals are subjected to partial or complete removal of the suprarenals. In the diseases that Dr. Corbett mentioned, we see the patients when they are in an extremely toxic state. The endocrine system is depleted, and the polyglandular picture is more evident than just simply the exhaustion of the suprarenals alone.

DR. ANSEL M. CAINE, New Orleans: My knowledge is limited entirely to clinical experience. One would think, after reading this paper and seeing the results as shown on the charts, that administering epinephrin chlorid in shock would, to a large extent, give a patient a chance to recover. There is a lot of truth in that. If we administer saline solution or glucose to which from 10 to 15 minims of epinephrin chlorid has been added, the patient will recover enough so that proctoclysis can be used and supply the necessary fluids, if the shock is due to loss of blood, or the patient can recover entirely on his reserve power. Crile has shown that when he administered 1:50,000 epinephrin at the rate of 3 c.c. a minute over a long period of time, it did a great deal of good. The blood pressure was maintained very well for a time, but it did not hold out. But, as Dr. Klein said, you cannot expect that the loss of epinephrin would be the only cause of shock, and I am sure that Dr. Corbett does not believe that it is the only cause of these constant symptoms; but by knowing the action of these internal secretions, we can do good. For that reason we always use epinephrin chlorid.

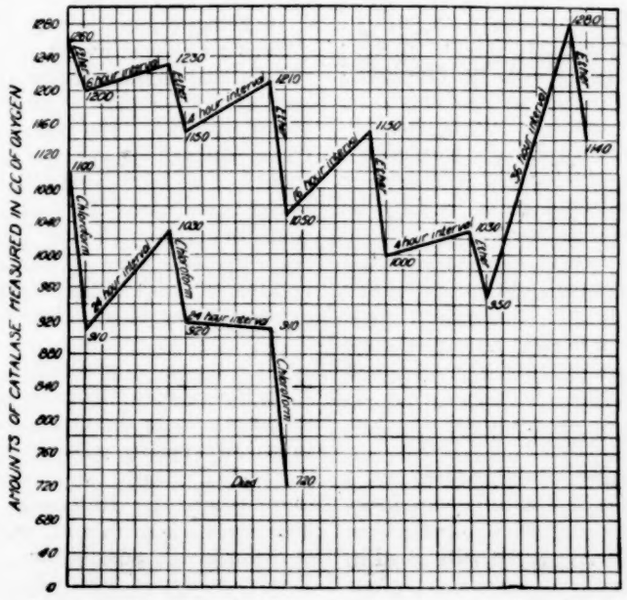
DR. J. F. CORBETT, Minneapolis: I do not contend that shock is simply an exhaustion of the suprarenal. There is, however, abundant evidence to show that residual epinephrin is necessary to overcome shock. The results of experiments

on animals by various investigators have been conflicting. When we stop to consider that the question of accessory chromaffin glands has not been taken into consideration by many of these investigators, we have an explanation for the contradictory opinion. I do not believe that epinephrin should be administered artifically in shock except for the purpose of tiding over temporarily some grave crisis. The purpose of the discussion is to emphasize the conservation of epinephrin.

EFFECT OF REPEATED ADMINISTRATION OF ANESTHETICS ON BLOOD CATALASE *

W. E. BURGE, PH.D.
URBANA, ILL.

We had already found that anesthetics produce a decrease in catalase, an enzyme possessing the property of liberating oxygen from hydrogen peroxid, and accordingly suggested that this decrease in catalase with resulting diminution in oxidation might be responsible for anesthesia. It was also found that a strong anesthetic, such as chloroform, produced a much greater decrease in catalase than a weaker anesthetic, such as ether, and that a rapidly acting anesthetic, such as nitrous oxid, decreased catalase more rapidly than a more slowly acting one.



Decrease in blood catalase brought about by fifteen-minute intervals of ether and chloroform anesthesia, with subsequent increase in catalase during the intervals between anesthesia.

The object of the present investigation was to determine the effect of repeated administrations of anesthetics on the blood catalase. The animals used were rabbits, and the anesthetics chloroform and ether. Catalase determinations were made by adding 1 c.c. of the rabbit's blood, diluted 1:3 with 0.9 per cent. sodium chlorid, to neutral hydrogen peroxide, and the amount of oxygen liberated in ten minutes was taken as a measure of the catalase content of the blood. Determinations were made immediately before and after fifteen minutes of anesthesia.

In all, twenty-four rabbits were used, twelve for chloroform and twelve for ether. The results of two experiments, which are fairly typical, are given in the accompanying chart.

It may be seen that the effect of the repeated administration of ether and chloroform was to lower the catalase content more and more after each successive administration, chloroform being more effective in this respect than ether. No rabbit survived more than three fifteen-minute periods of chloroform anesthesia; whereas nine of the twelve rabbits survived the five periods of ether anesthesia, and are in good condition at present.

* From the physiologic laboratory, University of Illinois.
* Read before the Section on Miscellaneous Topics at the Seventy-Third Annual Session of the American Medical Association, St. Louis, May, 1922.

ABSTRACT OF DISCUSSION

DR. MORRIS H. CLARK, Kansas City, Mo.: The dictionary says that catalase is an enzyme which decomposes hydrogen peroxid, returning to its original state at the end of the process. That left me in the dark as much as ever. Then I saw the *Journal of Biology*, and the first sentence I came to was very helpful. It said: "Considering the tremendous amount of work that was done on this subject, it is very discouraging that we have learned nothing." I found one statement that caught my attention because I found it in several places, that "catalase in the presence of hydrogen peroxid will liberate oxygen molecules." It does not make a bit of difference whether the oxygen or the amount of catalase in the blood is due to the number of red blood cells or catalase in the blood. What we want to know is how much oxygen is liberated by the peroxid when blood is added. If we find that less oxygen will be liberated in certain conditions, such as infections, we can measure the severity of the infection by the amount of oxygen liberated. If we find that anesthesia reduces the amount of catalase in the blood, we know that we are getting some detrimental effect from the anesthetic. These experiments are helping us to obtain something, and sometime we shall put them all together and evolve a definite theory that will be of absolute value.

DR. F. H. MCMECHAN, Avon Lake, Ohio: In Burge's work we have evidence that caffein and theobromin, for all practical purposes, preserve the catalase functions of the liver during anesthesia. In view of the fact that caffein and theobromin are such important drugs also, conserving kidney functions as well as catalase secretion, would it not be very useful to have a series of experiments made, to determine the amount of caffein and theobromin which could be given to the normal or the serious risk patient coming to operation, in order, before operation was attempted at all, to supply that patient with a reversible amount of these drugs to counteract any effect of the anesthetic, which would have to be given during the course of the operative procedure? What I mean to say is this: Is it a practical possibility to give the patient, previous to operation and anesthesia, such an amount of caffein as will not invalidate the anesthesia, but which, irrespective of the anesthetic used or the duration of the anesthetic period, will leave the patient in the same physiologic condition as though the anesthetic had not been administered, because the caffein had taken care of the oxidative processes of the body in a physiologic way, during the surgical procedure?

Primitive Medicine and Religious Beliefs.—If we are to understand the attitude of the primitive mind toward the diagnosis and treatment of disease, we must recognize that medicine, in our sense, was only one phase of a set of magic or mystic processes designed to promote human well-being, such as averting the wrath of angered gods or evil spirits, fire-making, making rain, purifying streams or habitations, fertilizing soil, improving sexual potency or fecundity, preventing or removing blight of crops and epidemic diseases, and that these powers, originally united in one person, were he god, hero, king, sorcerer, priest, prophet, or physician, formed the savage's generic concept of "making medicine." —F. H. Garrison, "History of Medicine."

UTERINE HEMORRHAGE OF BENIGN ORIGIN TREATED BY IRRADIATION

AN ANALYSIS OF FIVE HUNDRED AND TWENTY-SEVEN CASES OF MYOMA UTERI AND MYOPATHIC LESIONS *

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We now have available for statistical study 527 cases of myomas and other benign lesions causing uterine hemorrhages which have been treated by irradiation in the gynecologic department of the university hospital. In various publications, we have defined from time to time the indications for and contraindications to this treatment; and we have carefully followed a set of rules which clinical experience has taught us are essential safeguards. The patient who falls into the hands of a radiologist who is not a surgeon, or the surgeon who does not employ this valuable remedy as part of his armamentarium, is indeed riding on perilous waters; for neither irradiation nor surgery can be employed exclusively if the best interests of the patient are to be served. Radium in the treatment of uterine hemorrhage of benign origin is chiefly applicable to patients in the fourth and fifth decades of life; but with proper precautions and in carefully selected cases, it may be employed successfully in younger women.

To bring this issue out more clearly, we shall discuss this treatment from the standpoint of age, and we have classified these patients as follows: adolescent girls and young women up to the age of 20; young women from 20 to 35; middle aged women from 35 to 45, and those entering the climacteric years.

ADOLESCENT GIRLS AND YOUNG WOMEN

Occasionally, without definable cause, young girls either menstruate excessively, the flow at times amounting to a more or less persistent metrorrhagia, which in many instances may not interfere greatly with health, but, on the other hand, may finally reduce the patient to a severe degree of anemia. Quite naturally, this condition may be a simple functional derangement incident to the inauguration of the menses, or it may be due to some more or less obscure cause, which is difficult to ascribe to a demonstrable patholgic lesion. Such cases usually tend to self-correction under appropriate hygienic and medical treatment; therefore, we studiously avoid any direct gynecologic intervention until the patient's health is manifestly deteriorating. Since the cooperation between the ovarian impulse and menstrual function is so interdependent, our inclination has been to ascribe these irregularities to some deviation of ovarian function, since a curettage so seldom proves more than temporarily effective. But one should be most wary in using radium in adolescent patients on the very threshhold of young womanhood, because in sufficient dosage it will just as surely stop menstruation for all time as will double ovariotomy.

In no field, therefore, should this agent be used with such precautions, and to this end we hold the initial irradiation at a very small dosage, with the possibility of only partial relief or even failure, with a view to a second irradiation, rather than resort at once to a more prolonged exposure with its dangers. In these young persons, after an examination under anesthesia for the purpose of accurately defining the pelvic conditions, we may with safety apply 50 mg. for from three to four hours. This usually proves effective in regulating the periods; but we never reach any conclusion as to its failure to cure under six months, for we fear the effects of a too early repetition of the treatment. Should the second irradiation be necessary, the first having been partially or wholly ineffective, we then increase the time from four to six hours, depending to some extent on the size of the uterus and the severity of the bleeding. In our experience, the second application is always effective.

Fortunately, these cases are of infrequent occurrence; hence, the very small number in our list. Precisely the same contraindication must influence one here as in all other cases; namely, in the presence of any inflammatory involvement of the tubes, irradiation is very postively contraindicated. Occasionally, a small cyst, or tuberculosis of the endometrium may be the hemorrhagic genesis. It is especially important, therefore, to exclude every possible cause for the metrorrhagia that might contraindicate the use of radium. In our series of 527 cases, there have been only five treated between the ages of 11 and 20 years. All of these patients except one were cured by the first treatment. One girl of 11 had 50 mg. applied for three hours; two, aged 15 had eight and five hour applications, respectively; two, aged 17, five and eight hours, respectively. One of these who was subjected to an eight-hour application suffered with flushes for one year—too perilously close to a menopause for comfort.

YOUNG WOMEN

In the cases of women, aged from 20 to 35, myomatous changes in the uterus begin to show their incidence in an increasing ratio, very few appearing between 20 and 25, but from then on gradually becoming more frequent. In women of this age, two controlling motives in life should be kept in the foreview: (1) her maternal possibilities, and (2) the sexual life. While radium is most effective in inhibiting the growth and ultimately diminishing the size of the tumor during these ages, it is also equally powerful in inducing a premature menopause. Therefore, the patient should be studied from the standpoint of a myomectomy if possible, as this operation is unquestionably to be preferred; and should this not be feasible, we are, as a rule, favorably inclined to a subtotal hysterectomy, with the preservation of the ovaries. In the first instance, the sexual and maternal physiology are not interfered with, but rather promoted; while in the second, menstruation may continue and the sexual life is in no way disturbed.

With this disposal of myomas occurring in young women, it will be noted that surgical intervention takes decided precedence over that of irradiation, leaving relatively few cases open to the latter treatment. As a result of our experience, we usually restrict the dosage of radium to 50 mg. for from six to twelve hours in these younger women. In such instances, the menstrual periods may recur more or less normally after a variable period of amenorrhea. Seventy-seven patients falling within these ages were subjected to irradiation. The age distribution was as follows: from 20 to 25, eleven; from 25 to 30, eighteen; from 30 to 35, forty-eight.

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MIDDLE AGED WOMEN

In the group of women aged from 35 to 45 the question of the maternal possibilities as well as the sexual life of the person becomes of much less importance in the choice of treatment. Usually, the maternal equation is either settled by the patient having a family, or the myomatous changes in the uterus have so distorted its structure as to render the patient sterile, or have made childbearing impossible. Further, the cessation of the ovarian function in women who have established sexual habits is of far less moment in its influence on this function, for the libido sexualis is now largely dependent on the psychic side of the individual rather than on the centers in the lower spinal cord, which are of capital influence in the inauguration of the sexual instincts.

If either of these phases stand out prominently in the patient's mind and she fears the abrogation of either, we incline toward surgical intervention. The ultimate happiness of the patient must have equal consideration with the restoration of physical health; for the latter without the former may have little merit in the mind of a patient suffering under a cloud of such misgiving. In such cases, a follow-up letter does not bring a very cheerful or grateful response, even though the patient's life may actually have been saved.

However, in considering the use of radium, we find that this question has largely been settled by the fact that the patient has passed the fortieth year. At this period, therefore, the preference, in case of doubt, always falls in favor of radium; whereas, in the younger women, surgery is almost invariably the remedy chosen.

WOMEN IN THE CLIMACTERIC YEARS

In the group of cases formed by women in the climacteric years, radium occupies a premier position; it is effective, it is quick in giving relief, the treatment does not incapacitate the patient, it is safe, and it is followed by practically no immediate disabling sequelae or remote ill effects, as our summary will show. With our experience as a guide, we have ceased to summarize what may happen from three to five years after irradiation; for, without exception thus far, we have nothing to record in the way of so-called continuing or remote changes which may be counted as a backflare from the treatment.

This statement is now well grounded on the careful study of cases running back six years. The fear of sarcomatous transformation of the tumor is without foundation, for in not one single instance has this malignant change been noted after irradiation in this large series. Hence, any criticism of radium treatment on this false assumption is without support. The cure in these cases is prompt, and the only after-effects are those noted in all women passing through the menopause. Many pass through this trying period with scarcely a complaint; others are troubled constantly; while a few have a very stormy and occasionally, a prolonged period of adjustment. At times, we have thought that possibly a menopause induced by irradiation is more violent than in other series of cases in which the climacterium is surgically induced; but when a large series of patients who have undergone double ovariotomy is compared with those who have been submitted to irradiation, the two are found to be similar.

In a review by Norris and Clark of two comparative series of myomatous and of pelvic inflammatory cases, in which the ovaries were preserved or removed, Norris, after a very close scrutiny of the results according to the age incidence, brought out a rather startling and revolutionary point which is fully substantiated in this study. In a large group of young women who have undergone double ovariotomy, there will unquestionably be a greater percentage who suffer acutely from climacteric disturbances; but it is strikingly evident that, in an equal number of patients either within or actually beyond the normal menopausal years, there will also be a considerable percentage in which these disturbances are quite as stormy and equally prolonged.

The temperamental and the nervous stability of these women has an infinitely greater bearing on this critical epoch than the mere question of age. For this reason, we study much more attentively than formerly the nervous status of the patient, when this decision as to the artificial induction of the menopause is under consideration. This is particularly to be taken into full account in young women; whereas, those who are within the menopausal years may be treated as the pathologic status indicates. This observation of Norris we especially emphasize, for it is of capital importance and must be carefully heeded if the best postoperative results are to be achieved.

SUMMARY OF RESULTS IN FIVE HUNDRED AND TWENTY-SEVEN CASES

The total number of cases of benign hemorrhage of the uterus occurring in myoma uteri and myopathic lesions is 527. Of this number, there are available for statistical study 476 cases which have been fully treated; of the remaining fifty-one, some have not been heard from and others have been too recently treated for conclusive study.

After irradiation, it is common for one or two and rarely three menstrual periods to occur before the actual onset of the permanent amenorrhea. To some extent, the time of the application of radium relative to the menstrual epoch influences the succeeding periods. If radium is applied shortly before the expected period, it is not likely in any way to influence the succeeding period; to the contrary, it may actually be more profuse; but, we may assume that within from four to six weeks at most the structural changes induced by the irradiation will have progressed sufficiently to stop the menstrual flow entirely.

In 476 cases which required only one treatment, permanent amenorrhea occurred promptly, or, after a short interval of temporary amenorrhea, there was a return to normal flow, when the dosage had been intentionally light with this end in view. Of 433 cases, forty either required a second application of radium, or an operation was necessitated on account of a persistent flow. The actual percentage in which the bleeding was controlled by the first application of radium in 476 cases was 91 per cent. In this entire number, only one death occurred, and this was of obscure origin. The patient was very stout, and within twenty-four hours after a plastic operation on the vagina, accompanied with a simple dilation and curettage, and an intra-uterine application of 50 mg. of radium, she developed severe pains in the epigastric region, which soon defined itself as a general peritonitis, from which she died.

A necropsy was not permitted in this case, and we are at a loss to know how to account for the fatality, particularly as the initial symptoms began in the upper abdomen and not in the region of operation. We are

inclined to think that there was a second lesion in the upper abdomen, and the ultimate catastrophe may have resulted from the perforation of an ulcer or possibly from some accident incident to a gallbladder or pancreatic lesion.

RECURRENCE OF BLEEDING AFTER IRRADIATION

In forty-seven cases, bleeding recurred after the application of radium; in twenty-seven, several months after the treatment. The remainder were noted as follows: one year subsequently, nine cases; from one to one and one-half years, two cases; from one and one-half to two years, three cases; from two to three years, six cases. Of these forty-seven, the recurrence was slight, or the periods returned to normal and did not require subsequent treatment, in twenty-three cases.

LEUKORRHEA

Frequently, after an intra-uterine application of radium, a thick yellowish leukorrhea develops, which is slight in amount and is seldom if ever persistent, rarely lasting more than from six to ten weeks. Frequently, it is so insignificant that unless the patient's attention is called to it, she does not refer to it. Further, along this line, there is a gratifying sequel in that a persistent leukorrhea is not infrequently cured by the treatment. We, therefore, lay little or no stress on the presence of leukorrhea as a sequel, because it is evanescent in character, and requires little or no attention.

MENOPAUSE

Irradiation in a dosage of 50 mg., for twelve to twenty-four hours, will produce climacteric symptoms of varying degrees of intensity in 60 per cent. of cases. In 36 per cent., the symptoms will be marked or severe. As a rule, they persist for from a few months to two or three years, and then subside. In an occasional case, severe symptoms may persist for several years. Menopausal symptoms seldom if ever occur in young women when a dosage of 50 mg. is applied for from six to eight hours; and in no case has the climacterium been induced by this dosage. Larger doses will produce these symptoms; but our impression is that they are usually neither so persistent nor so severe in younger women as those of menopausal years. Strangely, this observation is at variance with the usual conception of the menopause, but it is in line with the statement of Clark and Norris in their analysis of cases after a complete hysterectomy.

From this study, we also draw the conclusion that the age factor in its relationship to the menopause is not nearly so much to be taken into account as the temperamental and nervous factors. Thus, a highly strung woman with poor nervous governors is very likely to be thrown markedly out of balance by the precipitation of the menopause, be it early or late. This point we would especially emphasize.

PREGNANCY

As the vast majority of these patients were subjected to irradiation after childbearing possibilities had ceased either through age limitation or because of the distortion of the uterus incident to pathologic changes, the consideration of pregnancy has but little bearing as a deciding factor in the choice of treatment. As we have already indicated in the preceding pages, our inclination is to perform an operation in the younger women rather than to use radium.

In our total number of cases in which radium has been used, there have been five women who subsequently became pregnant. In one, a woman, aged 29, suffering with persistent menorrhagia of a myopathic character, in whom a three hour application of 85 mg. of radium was employed, the menses returned to normal after three preceding curettages had failed to effect this regulation. Two years after marriage, a full term healthy child was born. The second patient, aged 31, had suffered from excessive menorrhagia for ten years, induced by a myomatous tumor the size of a small orange. Subsequent to the irradiation with 50 mg. for twenty-four hours, she passed through a definite menopausal cycle. The periods then came back to normal for a short time and pregnancy occurred. She passed through a normal pregnancy up to full term, but succumbed to a postpartum hemorrhage, following the birth of the baby by accouchement forcé. In a third patient, pregnancy occurred two years after an application of 50 mg. for twenty-four hours, but resulted in a miscarriage. In a fourth, a normal delivery occurred after three years in a patient who had been submitted to an application of 50 mg. of radium for six hours. In a fifth patient, who had twice received applications of 25 mg. of radium for twenty-four hours, three pregnancies occurred. All of these children were born prematurely and were either dead at delivery or died subsequently.

From this summary of results, it is very plainly evident that the application of radium gives but little forecast in favor of restoring the childbearing possibilities; for, of these seven pregnancies, only two children came to full maturity. This study, therefore, emphasizes the statement already laid down that when pregnancy is still in contemplation by the patient, an operation should be advised, instead of irradiation.

LATE RESULTS OF IRRADIATION

The criticism offered to the use of radium has been that the final results of irradiation are not yet known. We believe that this skeptical forecast may be set at rest when we find in our large list of cases that, in at least 300 of them that have been followed from three to six years, thus far no single instance has come to our attention in which there was any remote deleterious result which could in any way be traced to radium.

In one instance, a patient who was operated on in another clinic after irradiation by us was found to have a carcinoma of the fundus. Previous to the treatment by us, a curettage had been done by a competent gynecologist and a negative report as to malignancy had been returned from his laboratory. The bleeding recurred after the curettage, and the patient then came under our care. The second curettage brought away insufficient débris for a pathologic examination. The hemorrhages had been absolutely periodic in character, the uterus was slightly enlarged, and there were no grounds on which to base a diagnosis of malignancy, all the evidence being in favor of a benign source of hemorrhage. Irradiation in this case caused a cessation of hemorrhage for sevaral months, when it again recurred; and, at an operation in another hospital, an extensive carcinoma of the fundus was found. Whether there was an oversight at the time of the irradiation, or whether the carcinoma originated subsequently, is open to question. Admitting the probabilities that the carcinoma was overlooked at the time of irradiation, this was but one single instance in 527 cases of such an oversight; and, as we review our 96 per cent. of permanent cures, we do not feel that this is a very serious indictment against irradiation, partic-

ularly as this error did not preclude the subsequent hysterectomy.

FAILURE TO RELIEVE BY ONE IRRADIATION

A reapplication was necessary for the relief of a continuation or a recurrence of the abnormal bleeding in twenty-eight cases. In all of these, the condition was cured by a second application, except in two, which required operation. The types of cases requiring a second treatment were: myomas, eight cases; myopathic hemorrhage, five cases; endometritis, two cases; bleeding from cervical stump, one case; pelvic inflammatory disease, one case; not stated, one case.

Of this list, an error was committed in reapplying radium in the pelvic inflammatory case, notwithstanding the fact that the bleeding was controlled and the patient was relieved of the symptoms; for inflammatory cases should not be submitted to irradiation. Further, it may be said of the twenty-eight patients that thirteen were subjected to 50 mg. of radium from six to twelve hours. In other words, in this list there were several young women in whom the light application of radium was made with the probability of having to resort to a second treatment.

CASES REQUIRING OPERATION AFTER IRRADIATION

Of the 527 patients, a total of eighteen were operated on subsequent to irradiation. Fourteen of these were myomatous cases in which the bleeding persisted or recurred more or less profusely following a variable period of amenorrhea. Four patients were subsequently operated on for chronic pelvic inflammatory disease and one for hemorrhage. It is gratifying to note that in this long list of cases, only 3 per cent. of the patients required operation after irradiation: certainly a very small percentage in a series of cases of so many varied conditions.

In the fourteen patients requiring a subsequent operation, ten of the operations were for myomas of the larger submucous type, three for myopathic hemorrhage, and one, in which there was recurrent bleeding from a cervical stump after a hysterectomy, for an adenomyoma.

MORTALITY

In the entire series, there was but one death, which occurred from peritonitis a few days after an extensive plastic operation and an application of 50 mg. of radium for twenty-four hours. The postoperative symptoms were those of an acute upper abdominal lesion. Necropsy was not performed.

COMPLICATIONS OF IRRADIATION

Phlebitis occurred in two cases; in one, a mere recurrent symptom of an old phlebitis. In the second, bilateral phlebitis followed on a repair of the cervix, a posterior colporrhaphy and irradiation. Eight patients developed symptoms of more or less severe neuritis, which is not an infrequent occurrence in women at the menopause, regardless of any antedating treatment or operation.

TECHNIC

The technic of application is very simple. Under nitrous oxid and oxygen anesthesia, a careful pelvic examination is made. The size of the uterus is ascertained, and its depth is measured by a sound and recorded for future reference. A thorough curettage is performed, and the curettings are saved for microscopic diagnosis. A 50 mg. tube of radium properly filtered is inserted to the fundus of the uterus. The duration of application depends largely on the age of the patient; in women at or near the menopause, the duration is usually twenty-four hours, and in young women proportionally less. A repetition of the application in young women is preferable to overirradiation.

A point which we always emphasize in the use of radium in all cases of benign hemorrhage is that one intra-uterine application of 50 mg. for twenty-four hours suffices to cure the case effectively. We, therefore, strongly deprecate the repetition of these treatments, since each application carries a minimum danger with it, and has no merit whatever over one application which effectively cures. Also, we do not favor coincident roentgen-ray treatments, for they are quite unnecessary.

The immediate results of irradiation are not unlike those of a simple curettage, with the exception that nausea is likely to be more persistent during the retention of the radium within the uterus. In all of this list, we have had no case of vomiting so persistent or prolonged as to give the slightest cause for anxiety. Usually, within one or two hours at most after the withdrawal of the radium, the nausea and vomiting cease. In a few instances, these symptoms have persisted for three days. As a rule, these patients remain in the hospital five days; for we follow the rule here that we observe in any case of simple curettage. It is unwise to permit the patient to go home the second day after irradiation, since the surgeon must see the patient through any possible danger arising from his surgical intervention, and such dangers are not past within twenty-four hours. As a rule, the patient sits up the third day and leaves the hospital the fifth day.

The standing rule is for all of these patients to return for examination at the end of from six weeks to two months after the treatment. If the patient lives at a distance and cannot return, a personal letter as to her condition is requested of the patient or of the attending physician. From our study of these final results, we feel that a three-year period suffices for a complete observation. By no means do all tumors disappear, and a few do not diminish greatly in size; but as the majority of these cases have been treated solely for hemorrhages, with the cessation of this symptom the patient may be looked on as cured. After irradiation, the great majority of tumors either shrink greatly in size or disappear completely. A subperitoneal tumor is not likely to be greatly influenced by irradiation.

CASES IN WHICH OPERATION WAS PERFORMED AFTER INEFFECTUAL IRRADIATION

CASE 1.—*Myoma.* One hundred milligrams of radium was applied for twenty-four hours. Operation was performed two months later. There was no relief of hemorrhage. A large tumor was found.

CASE 2.—*Myoma, large.* Fifty milligrams of radium was applied for twenty-four hours. There was no effect on bleeding.

CASE 3.—*Adenomyoma of cervical stump.* Fifty milligrams of radium was applied for twelve hours. There was no relief of hemorrhage.

CASE 4.—*Myoma.* Fifty milligrams of radium was applied for twelve hours. The periods recurred in normal amount a few months after irradiation.

CASE 5.—*Myoma, large.* Fifty milligrams of radium was applied for twenty-four hours. Two applications were made, with an interval of ten months. Bleeding was not controlled.

CASE 6.—*Myoma.* Fifty milligrams of radium was applied for eight hours. Bleeding continued.

CASE 7.—*Myoma.* Fifty milligrams of radium was applied for twelve hours. Operation was performed two months later, as bleeding was not controlled.

CASE 8.—*Myopathic lesions.* Fifty milligrams of radium was applied for twenty-four hours. Operation was performed eight months later for recurrence of bleeding.

CASE 9.—*Myopathic lesions.* Twenty-five milligrams of radium was applied for six hours. Operation was performed two years later for recurrence of bleeding.

CASE 10.—*Myoma.* Fifty milligrams of radium was applied for twelve hours. Operation was necessary for recurrence of bleeding.

CASE 11.—*Myopathic lesions.* Fifty milligrams of radium was applied for four hours. There was persistent bleeding.

CASE 12.—*Myoma, large.* Fifty milligrams of radium was applied for twenty-four hours. There were two treatments, with an interval of nine months. After the second treatment, there was amenorrhea for two years, then a recurrence of bleeding.

CASE 13.—*Myoma.* Fifty milligrams of radium was applied for twenty-four hours. The tumor was large. There was recurrence of bleeding after nine months, requiring operation.

CASE 14.—Fifty milligrams of radium was applied for fourteen hours. Radium had no effect on bleeding. Operation was performed six months later.

CASES IN WHICH OPERATION WAS PERFORMED FOR SUBSEQUENT PELVIC INFLAMMATORY DISEASE

CASE 15.—Operation was performed six weeks after irradiation. This was a case of chronic pelvic inflammatory lesion, lighted up by irradiation.

CASE 16.—The patient was well for three years following irradiation, and then developed symptoms of acute pelvic infection of streptococcus type.

CASE 17.—Operation was performed one and one-half years after radium treatment for extensive pelvic inflammation.

CASE 18.—Radium was applied in this case which had been diagnosed as pelvic inflammatory disease at the time of the first treatment. This was a cardinal error, for this treatment is not suited to pelvic inflammatory lesions.

Having been among the first to adopt this plan of treatment following the pioneer work of Drs. Abbe and Kelly, we have endeavored to thread our way cautiously, expanding the field of application only as our experience pointed the way, and we now feel that we are on a solid therapeutic foundation. Following are clinical rules which have been evolved from our observations of this large series of cases.

CONTRAINDICATIONS

1. Tumors larger than the size of a four months pregnant uterus, or those complicated by inflammatory lesions or neoplasms of the adnexa, should not be submitted to irradiation. Hysterectomy offers quicker relief for the first, and surgical intervention is imperatively indicated in the second class. In exceptional cases, large tumors have been successfully irradiated in the face of some grave contraindications to the major operation, and in others this treatment has been employed to check hemorrhage in seriously anemic patients, thus permitting a sufficient recuperation to insure a safer operation.

2. In tumors causing pressure symptoms, the shrinkage of the tumor is too slow after irradiation; therefore, hysterectomy is to be preferred.

3. When, in tumors, there is cachexia out of proportion to the blood loss, this may be due to a necrosis of the tumor, which may be hastened by the irradiation. We have observed such instances. The recovery of the patient is very prompt and most satisfactory after hysterectomy, and it is, therefore, preferable.

4. The larger submucous tumors, and those so distorting the cervical canal and fundal cavity as to render the introduction of the radium capsule difficult or impossible, are not suitable for irradiation. A pyometrium may follow the application of radium in such cases. This sequel has followed in two instances.

5. Tumors rapidly increasing in size or those which have undergone calcareous changes are not adapted to irradiation.

6. Myomas in young women fall, as a rule, within the surgical domain, as a myomectomy or partial hysterectomy, with preservation of the ovarian function, is decidedly preferable.

7. In patients suffering with an associated intra-abdominal lesion, such as a cholelithiasis, appendicitis or gastric lesions of surgical consequence, it is injudicious to employ radium. In such instances, an exploratory incision should be made, thus giving a comprehensive diagnostic insight. The abdominal lesion may require first attention; but this does not preclude an irradiation at the same sitting, if the myoma or myopathic cause of the hemorrhage falls within the class to which this treatment is applicable. Under this comprehensive plan, the treatment is fully subservient to the surgeon's judgment.

INDICATIONS FOR IRRADIATION

From a study of the foregoing contraindications to irradiation, it appears at first glance that the field for its application must be a narrow one; and yet such is not the case. In 1921, 210 patients falling within these two domains were admitted to the gynecologic service of the university hospital. Of these, 110 were submitted to irradiation and 100 to surgical intervention. Both classes of cases, under this careful segregation, yielded first class results. Those undergoing an operation ran greater risks and were longer in the hospital; and the return to efficiency was much slower. But the ultimate outcome was entirely satisfactory, since these patients belonged without question to the surgical field.

We would commit a serious error were we to consider this splendid and most effective plan of treatment as a competitor of surgery. The two go hand in hand, and both must be supervised by the surgeon, and not by the roentgen-ray expert or the roentgenologist, for each in a varying degree is a surgical measure. As to the indications for this treatment, we may briefly summarize it in one sentence: "Irradiation is the treatment of choice for the smaller myomas in women approaching or within the menopausal years whose only symptom is hemorrhage."

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ABSTRACT OF DISCUSSION

DR. HENRY SCHMITZ, Chicago: In my work I observe the same indications as given by Dr. Clark. In every case of bleeding uterus to be treated with radium I insist on a diagnostic curettage. The ratio between the cases treated with radium and those subjected to surgery is as 1:3. In other words, 25 per cent. of so-called benign uterine hemorrhages are treated with radium, and the other 75 per cent. by surgery. Therefore, the treatment of benign uterine hemorrhages belongs to the surgeon and should, under no circumstances, be undertaken by a radiologist unless the latter cooperates with the surgeon. We have treated 142 cases up to date. One patient died from septic peritonitis. The patient was the

last of five patients being treated on this particular morning with radium for benign and malignant hemorrhages. The same surgeon did the work in the same operating room. The diagnostic curettage was negative. The bimanual findings were normal. We observed a case of carcinoma of the uterus in spite of careful diagnostic curettage and histologic diagnosis. It was a cervical carcinoma. Hemorrhage recurred six months after the treatment. At this time the cancer had invaded the parametria. Whether the carcinoma was present at the time of the insertion of the radium it is impossible to state, as the microscopic report was negative. It is fair to assume, however, that the patient was suffering with cancer. Another patient returned two years later with an advanced fundus carcinoma, though the diagnostic curettage was microscopically reported as a hypertrophy. Two sarcomatous degenerations were detected very soon after the treatment, and were removed; so the patient did not suffer from procrastination. We also saw four cases of degeneration fibroids: three simple fatty degenerations and one red degeneration. I have mentioned these observations, not to discourage the use of radium in cases of benign hemorrhage, but to bring out the point that it is extremely important to make a very careful diagnostic curettage, and if we are in doubt to resort to surgery rather than procrastinate by the use of radium.

DR. F. F. LAWRENCE, Columbus, Ohio: The question seems to be, first, Shall we treat the symptoms? Shall we be satisfied with a symptomatic cure or relief? In some of the cases of radium and roentgen-ray treatment the results are apparently magical, while in others the malignancy seems to be increased in its activity. The first thing we should remember is that every neoplasm, no matter where, is potentially a malignancy. Second, that fibroma or myoma of the uterus, while it develops malignancy, is not carcinoma. It may be the cause of carcinoma by its continued irritation, and produce an epitheliomatous growth which is carcinomatous. With this potential malignancy, we should ask ourselves, Can we afford—when the operation of supravaginal hysterectomy for removal of the myomatous uterus has a mortality, when properly performed, of 1 per cent.—to deal with this potential malignancy by any type of treatment other than complete removal? Noble and other competent men have shown, and probably Dr. Clark has found, that there is a potential malignancy in fibroma of from 5 to 8 per cent. That is to say, from 5 to 8 per cent. of the fibromas, when removed, have undergone sarcomatous change. When we put against this 1 per cent. mortality in hysterectomy properly performed, can we afford to run from five to eight times the risk of malignancy by attempting to treat with radium or roentgen ray or anything else?

DR. JOHN G. CLARK, Philadelphia: Dr. Schmidt raises the question as to mortality. There was one fatal case among the 527 treated. The death occurred from some obscure cause. The symptoms were of a fulminating character, and occurred in the upper abdomen from apparently some coincident lesion. Neither an operation nor a necropsy was permitted, and we have designated this as a fatality from peritonitis, induced by the curettage, although the symptoms would really not sustain this interpretation. I am, indeed, glad that Dr. Lawrence has brought into the discussion the perennial question of malignant degeneration in myomas. If there was ever a fallacy that should be annihilated, this is one. The frequency of sarcomatous transformations in myomas is so small as almost to be negligible. If, as Dr. Lawrence would have us believe, this peril is so ominous, certainly sarcomatous sequels in the cervical stump after a supravaginal hysterectomy should frequently be noted, and yet in more than 1,500 such operations we have yet to see such a postoperative incident. In our laboratory, in which more than 1,200 uteri have been examined after hysterectomy for myomas, there were only twenty-two sarcomas that were not diagnosed before the specimen was sent to the laboratory. The hiatus in pathologic statistics emanating from different laboratories depends on what one pathologist would call sarcoma and what the other would call fibroma. It is quite possible to take out of almost any fibroid tumor isolated areas which could very easily be mistaken for spindle cell sarcoma. In such instances the whole specimen is of chief diagnostic import, not these compact areas. I am sure, therefore, that the discrepancy in diagnosis lies in this difference in interpretation. We have seen several carcinomas occurring in the cervical stump in which a previous supravaginal hysterectomy has been performed, but a control diagnostic curettage had not been made. As these cases have passed through our clinic, there were 101 cases of adenocarcinoma of the uterus in which the clinical diagnosis was positive in fifty-seven and doubtful malignancy, twenty-four; in the remainder the positive diagnosis was made in the laboratory in cases which otherwise would have been considered of benign type. In such instances proper surgical measures were instituted before the patients were discharged from the hospital. The ultimate judge, therefore, in all of these cases, whether one uses radium or operates, is a skilled pathologist. All too frequently a good general pathologist goes completely amiss on this point, for he may see in normal cyclic glandular changes in the endometrium such puzzling pictures that he may designate them as adenocarcinoma. The main point which I particularly wish to stress is that we should cease to hold over patients the suggestion that a myoma is liable to sarcomatous changes, for such transformations are so small as almost to be negligible and should never be the crucial point on which a radical operation is decided. Dr. Lawrence admits at least a 2 per cent. mortality from surgical intervention. Therefore, in this series, were they all to have been submitted to hysterectomy, there would have been at least ten deaths; under irradiation there has been one.

STANDARDIZATION AND PRESERVATION OF COMPLEMENT SERUM FOR WASSERMANN TEST *

E. H. RUEDIGER, M.D.
BISMARCK, N. D.

Laboratory workers who are familiar with the Wassermann test know that the serums from different guinea-pigs differ greatly in complement activity, and that under ordinary conditions complement rapidly deteriorates but can be preserved for varying lengths of time under suitable conditions.

About two years ago I [1] showed that a number of complement serums from guinea-pigs gave results with the same human serum varying from 2+ to 10+. Even greater differences have been observed since; serums from some guinea-pigs have given negative results while serums from other guinea-pigs gave 10+ with the same human serum. Such irregularities can be eliminated by selection of complement serum, probably by selective breeding of guinea-pigs, by selective feeding of guinea-pigs and by preservation of the good complement serums.

SELECTION OF SERUM AND GUINEA-PIGS

The preserved positive control serum, composed of a mixture of twenty syphilitic human serums, I diluted to such an extent that it gave approximately 6+ with a fairly good complement serum. This diluted positive control serum was then used in titrating the complement serums from the different guinea-pigs. At the beginning of this work, about two years ago, the differences in the results were very striking; they varied from negative to 10+, and from no hemolysis to complete hemolysis. All guinea-pigs whose serums gave less than 5+ or had poor hemolytic power were rejected and were used for other work or were killed.

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* From the pathologic laboratory of the Bismarck Evangelical Hospital.

1. Ruediger, E. H.: Journal-Lancet **40**: 565 (Oct. 15) 1920.

At the first time I titrated the serums of all guinea-pigs I had I rejected approximately 50 per cent. as absolutely unfit for the Wassermann test. A selected few, those whose serums had good hemolytic power and gave 10 + or more with the positive control, were kept as breeders and the others were kept for the Wassermann test. For the Wassermann test each guinea-pig serum is titrated and at least six selected serums are mixed. Selective breeding has been carried on for nearly three years; when I started I rejected 50 per cent. as worthless, and of approximately 100 guinea-pigs raised last summer under selective breeding I rejected only 5 per cent. as worthless; 50 per cent. fell into the exceptionally good class.

INFLUENCE OF FEED ON COMPLEMENT

In winter, a number of selected guinea-pigs were divided into four groups, called A, B, C and D. Group A was fed on raw carrots, raw cabbage, raw lettuce, raw apple peelings, hay, oats and bread. Group B received raw carrots, hay, oats and bread; Group C received raw cabbage, hay, oats and bread, while Group D was fed on raw potatoes, hay, oats and bread. All received as much water as they wanted. After one month of special feeding, the serums of all the guinea-pigs were again titrated, and they were all good. A barely perceptible superiority was found in Group A over Groups B, C and D.

Last fall the complement serums of a number of grass-fed guinea-pigs gave 8 + with the preserved positive control serum. During the winter the fixability gradually rose, reaching about 20 + by spring, and in two weeks on the fresh grass diet the fixability abruptly fell more than 50 per cent. The serums of guinea-pigs which gave 8 + last fall and 20 + toward spring now gave only 6 +, while the hemolytic power remained unchanged or nearly unchanged.

PRESERVATION OF COMPLEMENT SERUM

Among the methods commonly employed to preserve complement serum, freezing the serum or salting the serum appear to be the most successful. In 1919 I [2] reported on a more or less unsuccessful result I had with with frozen complement serum. At that time I tried it under unfavorable conditions. During the winter months the complement serum was kept outdoors; but, as the temperature varied greatly, I had to pack small test tubes with complement serum in salt and ice. The serum was usually worthless in three weeks. The only explanation I can offer for that rapid deterioration is that salt or brine got into the tubes. Salt (crude sodium chlorid) is strongly anticomplementary; hence a small excess renders a complement serum unfit. Since that report I kept complement serum at a temperature of below zero Fahrenheit in a cold storage room for which I am indebted to the Northern Produce Company at Bismarck, N. D. Kept in the cold storage room at a temperature below zero Fahrenheit, complement remained active for from eight to ten weeks. Practically no deterioration could be detected in a month.

Adding salt to complement also helps to preserve it. At ordinary refrigerator temperature I find that it deteriorates in less than two weeks. Salted complement kept at approximately 1 C. remained active for from four to six weeks; one lot was still good after eight weeks.

2. Ruediger, E. H.: J. Infect. Dis. **25**: 269 (Sept.) 1919.

SUMMARY AND CONCLUSIONS

The serums from different guinea-pigs differ greatly in fixability and in hemolytic power.

In order to obtain fairly uniform complement serum, the serums must be selected, the good serums being used and the poor serums rejected.

Breeding only guinea-pigs with good complement greatly improved our collection of guinea-pigs for this purpose in three years.

Any raw vegetables, such as potatoes, cabbage or carrots, prevent scurvy and are suitable winter feed for complement guinea-pigs. A mixture of raw vegetables gives the best results.

The fixability of guinea-pig complement was much better in winter than in summer, which may be due to the large quantity of grass fed in summer.

Frozen complement serum kept below zero Fahrenheit in the cold storage room remained active for eight weeks.

Salted complement serum kept at approximately 1 C. remained active for more than four weeks.

PREMATURE INFANTS

MALFORMATIONS AND DISEASES OF THE NERVOUS, OSSEOUS AND MUSCULAR SYSTEMS REQUIRING CORRECTIVE TREATMENT *

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CHICAGO

According to the general use of the term, we designate as premature all infants who are born before the end of the normal term of pregnancy (forty weeks); but in common usage the term refers only to those infants whose gestation period was 260 days or less. There is another class of infants who may be considered in practically the same category as premature infants—the weaklings, infants born at term or nearly at term, who have suffered more or less severely during their intra-uterine existence through factors which interfered with their nutrition, and consequently interfered with their development. They are classed as congenitally diseased infants.

For our purposes, we shall consider the conditions most frequently seen in premature infants which are of especial interest to the surgeon in three groups: (1) congenital malformations of the fetus due to intra-uterine diseases and deformities, (2) pathologic conditions developing at or shortly after birth, and (3) those developments of nutritional disturbances during the first months of life which result in secondary complications of the osseous, muscular and nervous systems.

CONGENITAL MALFORMATIONS DUE TO INTRA-UTERINE DISEASES

In the first group, constitutional defects and congenital malformations can be given only the most superficial consideration, because of the large variety and need for individualization in treatment. Organic diseases of the central nervous system, with resulting disturbances in growth, and deformities, frequently cause premature expulsion of the fetus.

Cephalocele.—Early death ensues in anencephaly, while encephalocele and meningocele are often amen-

* Read before the Section on Orthopedic Surgery at the Seventy-Third Annual Session of the American Medical Association, St. Louis, May, 1922.

able to surgical procedure. When the deformed structure contains a cavity corresponding to a ventricle, the terms hydro-encephalocele and encephalocystocele are applied. The latter deformities incline to a rapid increase in size, while those which are not connected with the cerebrospinal canal tend to remain stationary. Three principal types of encephalocele are to be distinguished: frontal, occipital and basal. The frontal types most frequently appear between the frontal bone and the nasal process. Rarer forms are noted, such as the naso-orbital and the naso-ethmoidal. The occipital is the most common form of cerebral hernia, and is usually seen at the nape of the neck, above or below the external occipital protuberance. The basal variety is noted in the nasal or pharyngeal cavity.

Spina Bifida.—When the embryonic medullary tube fails to close properly, deformities result, corresponding to the nature and location of the opening. The open, congenital fissure of the spinal column, termed rachischisis, is invariably fatal. The closed types, spina bifida cystica, are generally situated in the dorsolumbar or lumbosacral regions of the vertebral column and, more rarely, in the cervical regions. Any of these forms of spina bifida may occur as a myelocele, myelocystocele or meningocele.

Treatment in all of these cases of encephalocele and spina bifida is essentially surgical, when the infant's development permits of interference. The decision as to early or late operation must, of necessity, be dependent on the fetal age of the infant and the gravity of the symptoms. Deformities most amenable to operation are those with a small pedicle and limited communication. Operation may frequently be delayed through repeated paracentesis, with intermittent indications for operation. Hydrocephalus frequently accompanies spina bifida, and is one of the most common complications secondary to operation, even in what appear to be favorable cases.

Numerous efforts have been made by different methods for the relief of internal hydrocephalus with, and without, spina bifida. Among the methods, drainage in the subdural space, under the scalp, into the jugular veins, and puncture of the corpus callosum have been among the most popular; but these procedures have given little more than temporary relief in the cases which have come under my observation. More recently, Dr. Alfred Strauss has operated in a series of six cases, removing a cylinder of cortex, about three-eighths inch in diameter, from the frontotemporal region. The plug of cortex extending into the lateral ventricle was removed with a piece of glass tubing, with sharpened edge, after the skull was opened at a lateral angle of the large fontanel, and the dura was incised and sutured to the arachnoid. In the experimental animals, the defect in the cerebral cortex remained permanent in five out of seven cases, and, in some of them, the lumen was found at necropsy to be lined by endothelium, probably from the lateral ventricles. Six infants on whom operation was performed are all living, with no visible evidence at this time of disturbances of sensation or muscular power. In the cases associated with spina bifida, with the exception of one case, the operation for removal of the cerebral cortex was performed eight or ten days previous to the spina bifida operation. In one case, the two operations were done at the same sitting. The results have been such in these cases as to encourage further development of the procedure described. It is to be remembered that little can be expected from major operative procedures before the infant has attained a fetal age and development approximating full term.

Other Congenital Abnormalities.—Numerous other congenital abnormalities of the skeleton are seen in infants prematurely born, some of which are due to developmental defects or displacements, and a considerable group of which are secondary to the posture of the fetus within the uterus. Among congenital abnormalities of the trunk skeleton, the most common are scoliosis and kyphosis of the vertebral column, and deformities of the thorax. The latter may result from improper development of the lungs, as in congenital atelectasis, congenital heart conditions and diaphragmatic hernia. More rarely, chest deformities may be secondary to lack of ossification of the ribs. Malformations of the extremities are not uncommon, and vary from defects of all the extremities to rudimentary formation of the distal part of a single extremity. Of the congenital changes of position and permanent contractures, the most frequent are club-foot and club-hand. The deformities are often multiple and may involve the larger joints as well, such as the hip joint, knee, shoulder, elbow and jaw. Congenital dislocations of the hip are the most important of this type of deformities. However, any of the joints may be involved. Intra-uterine fractures may result from abnormal bone development, constriction by amniotic bands or intra-uterine trauma. Abnormalities of the skull may necessitate mechanical support in order to avoid further deformity. The conditions of harelip and cleft palate in the very young present feeding problems rather than surgical ones. Among the more common congenital diseases involving the bones and joints are mongolian idiocy, chondrodystrophia and osteogenesis imperfecta. Cretinism may result in premature birth, and is associated with delayed ossification. The retarded skeletal and muscular development leads to malformations requiring correction.

PATHOLOGIC CONDITIONS DEVELOPING AFTER BIRTH

In the second group of pathologic conditions affecting the growth and development of premature infants, I will include those becoming manifest shortly after birth. The most important conditions encountered are those affecting the nervous system. These are usually dependent on one of two causes, either birth hemorrhages or hydrocephalus. Birth hemorrhages of the intracranial type belong in two groups. In the first group may be included prenatal intracranial hemorrhages, which may have been the cause of the premature expulsion of the fetus, and in the second group hemorrhages within the cranial cavity and spinal canal which result from trauma, secondary to labor, or a tendency to spontaneous hemorrhages. Ylppö believes that intracranial hemorrhages are responsible for 30 per cent. of the deaths of premature infants in the early days of life. Hemorrhages from tears of the tentorium and subdural hemorrhages, which are the most frequent forms seen in full-term infants, are only exceptionally seen in premature infants. In the latter, the hemorrhages within the cranial cavity are usually subarachnoidal or intrapial, but, in the spinal column, the hemorrhages are more commonly extradural. Ventricular hemorrhages are frequently found in premature infants, but hemorrhage into the brain substance proper is quite rare. Spontaneous hemorrhages, which occur in considerable number, can usually be distinguished by a study of the coagulation time of the blood.

Fortunately, many infants who suffer from intracranial hemorrhage escape mental disturbances, probably in large part because of a lack of development of the bony structures of the skull, allowing the brain to accommodate itself to the increased intracranial pressure. Most of the infants, however, are less fortunate in escaping the different types of paralysis, which may involve the trunk muscles and from one to all of the extremities. Therefore, infants and children who are mentally normal, or even precocious, with varied degrees of spastic paralyses, are not uncommon. On the other hand, mental defects in premature infants are, in at least 75 per cent. of all cases, accompanied by spastic monoplegias, paraplegias or diplegias. Paraplegias or diplegias have been reported in more than 3 per cent. of all the cases of surviving premature infants. The figure would undoubtedly be much higher had all premature infants remained alive, since most of the infants suffering from injuries to the brain die very early. The average coagulation time in full-term newborn infants is seven minutes, as estimated by the Rodda method. In icterus, melena, jaundice due to syphilis, and nontraumatic cerebral hemorrhage, the coagulation time of the blood is prolonged; in most instances, to such a degree that the diagnosis is readily made by a study of the coagulation time. The subcutaneous injection of human serum is the most efficient method of treating delayed coagulation or slow bleeding. The further early treatment must of necessity be symptomatic and expectant. There is always a possibility that spontaneous cure may result. Lumbar puncture, although primarily used as a diagnostic measure, may have a beneficial therapeutic value. While decompression, with removal of surface clots, is to be recommended in hemorrhages in full-term infants, little can be expected in premature infants unless they have had almost the full period of gestation.

For the various types of paralysis, mechanical corrective measures should be undertaken early, in order to prevent marked deformities. Massage and active and passive movements should be practiced regularly before the end of the first year. Muscle training in walking, climbing and other activities should be instituted under the supervision of a trained assistant. Orthopedic appliances are frequently indicated. Surgical procedures may be necessary later.

Hydrocephalus.—True congenital hydrocephalus is usually of the internal type and associated with enlarged ventricles. The external form is rare. The megacephalic head (Ylppö) of the premature infant is frequently described as a hydrocephalic head, to which it has no relation. Megacephaly is dependent on the fact that the brain growth continues at its normal or a greater rate while the remainder of the body is retarded in its development, resulting in a disproportion between the size of the head and the body.

Congenital hydrocephalus may follow blocking of the aqueduct of Sylvius, the foramen of Luschka or the foramen of Magendie, giving rise to the so-called obstructive type. This may be due to a congenital abnormality, however, for more often obstruction is the result of intra-uterine serous meningitis or meningoencephalitis. Congenital hydrocephalus of the second large group is due to interference with the absorption of cerebrospinal fluid from the subarachnoid spaces, following intra-uterine inflammation of the meninges, with resultant adhesions causing obliteration of the foramina and the cisterns. Syphilis, in all probability, is more frequently the cause of congenital hydrocephalus in premature infants than in full-term infants. In the latter, it is estimated that not more than 20 per cent. of the hydrocephalus is due to syphilis. Intracranial hemorrhages and cystic formations may be associated with secondary hydrocephalus.

Many of the infants show an enlargement of the head at the time of birth; however, the hydrocephalus may become evident only after a latent period. A marked retardation in the development of the brain may result. The head need not be enlarged; in fact, it may be very small, as in microcephalic idiots, the brain being little more than a large cyst. In many instances, shortly after birth, hypertonus and spasms of the muscles, increased reflexes and general convulsions are to be noted. In others, apathy, shallow respiration and feeble heart action are present early, giving indications of involvement of the central nervous system. When the characteristic enlargement of the head is absent, the diagnosis may be different. Intracranial hemorrhages and meningitis must be ruled out. Lumbar or ventricular puncture may be of assistance.

The prognosis as to life and physical and mental development is dependent on the underlying pathologic condition. The only early therapeutic measure is lumbar or ventricular puncture, with drawing off of cerebrospinal fluid. Later, surgical interference may be indicated.

Traumatic Injuries.—Trauma, with fractures, epiphyseal separations and dislocations and nerve injuries resulting from labor are seen in a greater percentage of premature infants than in full-term infants. Owing to the inability of these weaklings to give expression to their pain and discomfort, the pathologic conditions may go undiagnosed for weeks. The infants should be viewed as potential subjects for traumatic injuries in all cases in which version and manual extraction are practiced. Roentgenograms should be made in very doubtful cases. Early institution of surgical measures is necessary to minimize deformities.

NUTRITIONAL DISTURBANCES DURING FIRST MONTHS OF LIFE

In the third group of pathologic conditions affecting the growth and development of premature infants, nutritional disturbances during the early months of life, secondarily affecting the nervous, osseous and muscular systems, are especially common to premature infants. In fact, the infants of this class escaping without such affections are the exception, and their absence suggests an understanding of their needs by the physician and attendants, and the institution of proper feeding and general care. It has been my experience to come in contact with large numbers of cases in which nerve, muscle and bone pathologic conditions were unrecognized until gross deformities had developed. Every premature infant should be viewed as a potential case of rickets, spasmophilia and secondary anemia, and the possibility of latent scurvy should be considered. The fact must not be overlooked that premature infants develop manifest clinical evidences of rickets and secondary anemia by the second to the fourth month, while full-term infants rarely show bone lesions of rickets which can be diagnosed before the fifth or sixth month by roentgenograms.

Rickets.—The more prematurely born the infant is, the greater is the tendency to develop severe types of rickets, and, in infants born in the seventh and eighth

months of fetal life, even human milk is not an absolute protection against the development of pathologic conditions in the bone and muscle.

The etiology is to a large extent dependent on three important factors: first, the chemical constitution of the premature infant, which differs from that of the full-term infant, the salt content of the body being far below the normal; second, underfeeding; third, improper environment. Birk, in his researches, found that the body of the average 4 months old fetus contained 14 gm. of ash; at six months, 30 gm., and, at nine months, 100 gm., showing that two thirds of the minerals of the full-term infant were due to retention occurring during the last three months of fetal life. In the new-born, fully 75 per cent. of the ash is made up of calcium and phosphate, which represent the chief constituents of the bones. From 85 to 90 per cent. of the bone ash is composed of calcium phosphate; from 10 to 15 per cent. of calcium carbonate, and a small amount of magnesium phosphate.

In premature infants, there is also a very low calcium retention during the first months of life (Hamilton). This is probably dependent on several factors, among the most important being the low mineral content of the body at birth and the restricted intake of foods which in themselves are low in calcium and phosphorus, such as breast milk and cow's milk mixtures of high dilution. In the light of our present knowledge we cannot but be convinced that sunlight plays an important part in the mineral metabolism of the body. It is the common experience to find the premature infant stored away in a secluded corner of a poorly ventilated and, not infrequently, dark room or, even worse, in a closed incubator.

Pathology: Rachitic premature infants show bone changes which present a pathologic picture different from the lesions seen in full-term infants, which develop at a later period during the first year. They are chiefly characterized by the development of megacephaly, characterized by a large round head with prominent frontal and parietal eminences and wide open sutures. Megacephaly (Ylppö) in the literature is commonly spoken of as hydrocephalus, with which, in the majority of cases, it has no relationship, the main exceptions being syphilis and conditions causing obstruction in the cerebrospinal canal, and spina bifida. The apparently large head in these cases is due to the fact that the growth of the brain tends to continue at its normal or a greater rate while the development of the remainder of the body is to a large degree retarded. The changes in the long bones often lead to error in diagnosis because of a typical change in the zones of proliferation. Only rarely are broadening, cupping and saw-tooth changes noted at the epiphyseal borders. More commonly the metaphysis is seen as a straight line with a hazy appearance of normal breadth, while the cartilage alone is enlarged. Similar changes are observed at the costochondral junctions. Clinically, therefore, a moderate enlargement is noted at these points while roentgenologically only minor changes are seen in the bones.

Pathologic fractures are of frequent occurrence and are usually partial, with a resulting deformity due to angulation. These are especially common in extreme cases of tetany, owing to overaction of the muscles in the presence of carpopedal spasms.

Treatment: Prime importance must be placed on a careful study of the previous diet and life history of the infant. In a consideration of the preceding diet, the cases may be classified into the breast-fed and the artificially fed. In the breast-fed, the diet usually errs in the direction of an insufficiency. Breast milk contains 2 gm. of ash per thousand cubic centimeters, of which 0.458 gm. is in the form of calcium. Holt, in his studies on calcium metabolism, found that breast-fed infants required 0.06 gm. of calcium per kilogram, or about 120 c.c. of breast milk per kilogram. Because of the obstacles to be overcome in feeding these infants, most of them, therefore, receive an insufficient amount of food to meet the needs during the first weeks. In the artificially fed, even though cow's milk averages 1.72 gm. of calcium per thousand cubic centimeters, because of the difficulty of digesting this food and the use of high dilutions, even greater obstacles present themselves. The same may be said of the feeding with proprietary foods, all of which are poorly balanced in their salt content.

Hygiene: The infant should at all times receive a sufficient amount of warm fresh air, and should be exposed to the sun's rays during the day. As soon as the infant has developed sufficiently to permit handling (mothering) in the form of frequent changes of position and light, massages are invaluable. The infant must at all times be protected from infection. Orange juice and cod liver oil, the latter combined with phosphorus, should be added to the diet in small quantities at the end of the first month of life. In the artificially fed, fresh cereals in the form of well cooked gruel can usually be added by the fourth month of life, and fresh vegetables in the form of a vegetable-cereal soup may be started by the sixth month.

Deformities.—Development of deformities of the osseous system, more especially of the spine and long bones, can be to a large extent prevented. Infants should be discouraged from walking until the bones are firm. Head deformities can be lessened by changing the position in which the infant sleeps. Scoliosis may be avoided by preventing the child from bearing weight on the spine through early attempts at sitting, and by preventing improper holding and carrying of the infant. Bowing and distortion of the legs often follow crossing of the legs around the pot-belly. Coxa vara is due to bearing the weight of the trunk before sufficient calcification has occurred. Many of the deformities may be avoided by the institution of proper orthopedic measures. Massage is of great value in strengthening the weakened muscles.

Secondary Anemia.—Closely associated with rickets is an anemia which develops quite regularly and strikingly during the first three months of life. There is a very distinct and early hemoglobin impoverishment which reaches its maximum in the third or the fourth month. Lichtenstein believes that the early anemia in the first three months of life is a hypoplastic condition, resulting through insufficiency of the hematopoietic system. The later oligochromemia is probably a sequel of impoverished iron storage. Landry has shown that the older the fetus, the higher the iron content of the body. Diseases in the mother, such as nephritis, anemia and tuberculosis, of necessity have a direct influence on the iron content in the infant. The low iron content of breast milk, 0.0017 gm. per liter, and of cow's milk, 0.0007 gm. per liter, with the minimum intake of food and difficulties of metabolism, all have a direct bearing on the development of anemia, as have also lack of fresh air and sunshine. The blood picture in the well,

breast-fed premature infants, and in those showing alimentary disturbances, shows an anemia of chlorotic type.

Treatment: For the general and hygienic treatment of primary and secondary anemia, the suggestions made for general measures in the care of rachitis should be followed. The infant must, above all, be given the advantage of a good environment, plenty of fresh air and sunshine.

Iron therapy for the purpose of increasing the iron content of the tissues and the hemoglobin should be started early. Among the iron compounds to be recommended are ferri carbonas saccharatus, ferri et ammonii citras or ferri lactas, in doses of from 0.03 to 0.12 gm. (½ to 2 grains) from one to three times daily.

Small doses of liquor potassii arsenitis, from 0.03 to 0.06 c.c., may be given one or two times daily for short periods. The infant should be observed carefully for evidence of arsenic intoxication. In the presence of congenital syphilis, mercurial therapy is imperative and may be combined with the arsenic treatment to good advantage.

It is of the greatest importance to bear in mind that, as in the case of rachitis, the treatment for anemia should be started early. It is our custom to begin the prophylactic treatment of both of these conditions in the first weeks of life.

Spasmophilia.—The term spasmophilia diathesis, as applied in the clinical sense, refers to a constitutional anomaly characterized by a general hyperexcitability and irritability of the nervous system. The most frequent active manifestations are general convulsions, laryngospasms, spasmodic apnea and carpopedal spasms. Among the latent manifestations are Chvostek's facial phenomenon and Trousseau's sign. Among the most constant findings is Erb's sign, the presence of hyperexcitability of the peripheral nerves, as evidenced by increased reaction to the galvanic current.

Spasmophilia appears earlier in premature infants than in full-term infants, and may be manifest as early as the sixth to the tenth week of life. The blood of these infants shows a marked decrease in its calcium content. Kramer, Tisdale and Howland found the calcium of the blood serum, in the presence of active manifestations, in the average of their cases to be 5.6 mg. per hundred cubic centimeters of serum, as compared with from 10 to 11 mg. in normal infants, while the inorganic phosphorus of the serum, in about half their cases, was within normal limits or slightly above normal. This is in marked contrast with cases of rickets uncomplicated by tetany, in which they found a much reduced inorganic phosphate serum content. The significance of this relatively high phosphate content in the presence of decreased calcium, in cases of rickets complicated by tetany, is as yet unexplained. The interest of the orthopedists in tetany depends to a great extent on the secondary complications, such as intracranial and intraspinal hemorrhages following convulsions, and the fractures and deformities secondary to tonic carpopedal spasms. Several cases of fracture due to prolonged and powerful contraction of the extremities have come under my care. Such deformities necessitate prompt general dietetic and medicinal treatment, reduction of the deformities and immobilization.

Scurvy.—All that has been said of the etiologic factors of rickets has an equally important bearing on the development of scurvy. Many cases of latent scurvy undoubtedly remain unrecognized. The severer types of hemorrhage and cases complicated by pathologic fractures, epiphyseal separation and intracapsular hemorrhage need surgical care as well as dietetic treatment.

5717 Blackstone Avenue.

ABSTRACT OF DISCUSSION

DR. W. MCKIM MARRIOTT, St. Louis: Dr. Hess has brought out two important points; first, that a premature baby is potentially an orthopedic patient, and secondly, that realization of this fact early enough may prevent a great deal of trouble later on. It is a fact not generally recognized that birth hemorrhage occurs more frequently in premature infants than in those born at term, even though the latter may be delivered by forceps. A certain number of premature infants during the first few months of life slowly develop a condition of opisthotonos. This does not seem to be dependent on birth hemorrhage. It has been our experience that the most satisfactory way to treat these infants is to keep them on the Bradford frame continually until there is no more tendency to opisthotonos. Unless this is done, the deformity may last a long time. Such a large proportion of premature infants develop rickets that it seems safe to consider that they will all develop rickets ultimately, and to treat them accordingly. It is advisable, as a routine, to give every premature infant a small amount of cod liver oil; 5 drops, three times daily, is usually sufficient to prevent rickets in infants of this type. There is no advantage in adding phosphorus to the cod liver oil. A certain number of premature infants who develop rickets may also show evidences of spasmophilia or tetany, as Dr. Hess has mentioned, and this may secondarily lead to cerebral hemorrhage as a result of the convulsions. The specific for tetany is calcium. To control the active manifestations, large doses of calcium chlorid are required: from 10 to 15 grains, four or five times daily.

DR. JULIUS H. HESS, Chicago: After illustrating some of the pathologic conditions encountered in premature infants, I would say that they are in great part worth saving. They are deserving of the full consideration of the diagnostic group of the hospital in which they are born, and not the least important factor in proper orthopedic inspection.

SUBSEQUENT COURSE OF A CASE OF ADDISON'S DISEASE

LEONARD G. ROWNTREE, M.D.
Director of Medicine, the Mayo Foundation
ROCHESTER, MINN.

Under the heading, "An Autograph History of a Case of Addison's Disease," the late Dr. A. L. Muirhead [1] gave an unusually interesting description of the clinical course of his own illness. In this report we find a professor of pharmacology investigating and recording the subjective and objective results of treatment on himself, and the effects of drugs on the course of Addison's disease, from which he suffered and eventually died. I will record the course of events subsequent to his report, which covered his illness until December, 1920.

CLINICAL COURSE

Dr. Muirhead left the Mayo Clinic, Aug. 11, 1920, and for several months continued to improve. The pigmentation had almost disappeared, and he was able to resume his work as professor of pharmacology in Creighton Medical School. Improvement continued until Jan. 25, 1921, when there developed a gastric upset, loss of appetite, abdominal discomfort and weakness, accredited by Dr. Sachs, his personal

1. Muirhead, A. L.: An Autograph History of a Case of Addison's Disease, J. A. M. A. 76: 652 (March 5) 1921.

physician, to hyperacidity. The attack yielded somewhat to sodium bicarbonate, magnesium oxid and bismuth so that he was again able to return to his work. However, the weakness persisted and he was placed on digitalis. Subsequent to January 25, the salivary secretion was deficient, and he lacked appetite and could not relish food. He continued on suprarenal treatment; epinephrin solution 1:1,000, 3 minims, twice a day hypodermically; rectal injections of 3/200 grain of the whole gland, and two capsules, 10 grains each, of whole gland, by mouth, at night. In February, the weakness and shortness of breath became more pronounced. He suffered from pain in the left upper portion of the chest which Dr. Sachs called "low pressure angina." The pain was relieved by heat, exertion, food and nitroglycerin.

In March, 1921, Dr. Muirhead returned to the clinic, complaining of extreme weakness which confined him to bed, and of pain in the left shoulder. The pigmentation was marked. He was extremely asthenic, and suffered almost constantly from gastro-intestinal symptoms, especially burning in the stomach. The heart was slightly enlarged and the sounds were of poor quality. An electrocardiogram disclosed a rate of 92, sinus tachycardia, notched QRS complex in all leads, arborization block, and slight right ventricular preponderance. The blood pressure was 86 systolic and 54 diastolic; the blood urea was 56 mg. for each hundred cubic centimeters, and the uric acid 2.8 mg. The hemoglobin was 68 per cent., and the erythrocytes numbered 3,820,000. The patient ate very sparingly, and toward the end of his stay developed a mild acidosis. He left the clinic, March 23, unimproved. The subsequent course of the disease is submitted in Dr. Sachs' report:

"The blood pressure just prior to his death was 84 systolic and 60 diastolic. Dr. Muirhead had a mild acidosis from time to time, for which he was given alkalis. Alkalis during the latter part of his illness distressed him greatly and were discontinued. His gastric acidity changed from a hyperacidity to a hypo-acidity. He progressively became more asthenic until it became difficult for him to swallow. He gradually lapsed into coma, and died, April 26, 1921."

REVIEW OF CASE

Clinically, Dr. Muirhead presented a typical, slowly progressing case of chronic Addison's disease with pigmentation, marked asthenia, intestinal discomfort, and low blood pressure. He gave a questionable history of renal tuberculosis; but tuberculosis was not borne out at operation, a right side nephrectomy being performed in 1918.

Subsequent to the nephrectomy, gout developed; the patient suffered from typical attacks of great severity, involving the metatarsophalangeal joints associated with high level of uric acid in the blood. Both the gout and blood uric acid responded promptly and permanently to a low purin diet. It is of interest to speculate on whether or not the removal of the kidney was a factor in the increase of the blood uric acid and in the development of gout.

The patient's improvement under treatment with epinephrin and the whole suprarenal gland during the first visit to Rochester, and after his return home, was striking objectively as well as subjectively. Rectal injections of epinephrin proved effective for a considerable period, although they were finally discontinued because of tenesmus. Glandular therapy was of unquestionable value in the relief of asthenia and of gastro-intestinal discomfort, and resulted in a temporary clearing up of pigmentation. For a time, at least, it also checked the general course of the disease.

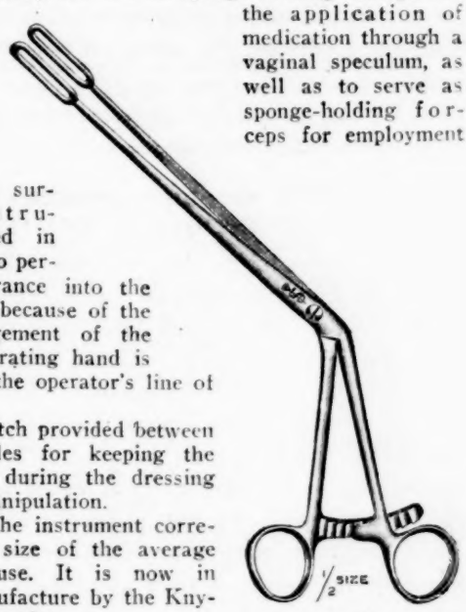
Although the results were only temporary, they were almost miraculous. Such definite relief of symptoms in the chronic form of the disease justifies a thorough trial of such measures in other cases of Addison's disease.

Clinical Notes, Suggestions, and New Instruments

NEW ANGULAR UTERINE DRESSING AND SPONGE-HOLDING FORCEPS

ALBERT M. CRANCE, M.D., GENEVA, N. Y.

The instrument shown in the accompanying illustration was designed chiefly for use as sponge-holding forceps for the application of medication through a vaginal speculum, as well as to serve as sponge-holding forceps for employment in gynecologic surgery. The instrument is shaped in such a way as to permit direct entrance into the speculum, and, because of the angular arrangement of the handle, the operating hand is entirely below the operator's line of vision.



New angular uterine dressing and sponge-holding forceps.

There is a catch provided between the ring handles for keeping the forceps locked during the dressing or sponging manipulation.

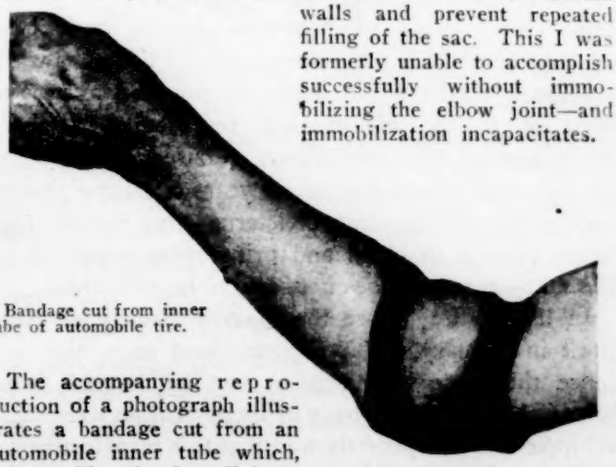
The size of the instrument corresponds to the size of the average speculum in use. It is now in process of manufacture by the Kny-Scheerer Corporation.

Schnirel Building.

A METHOD FOR MAINTAINING PRESSURE OVER ELBOW IN OLECRANON BURSITIS (MINER'S ELBOW), WITHOUT IMMOBILIZING THE JOINT

GUY S. VAN ALSTINE, M.D., CHICAGO

The usual treatment of a recent olecranon bursitis with nonpurulent effusion is aspiration, followed by bandage or adhesive strap pressure to favor adhesion of the bursal walls and prevent repeated filling of the sac. This I was formerly unable to accomplish successfully without immobilizing the elbow joint—and immobilization incapacitates.



Bandage cut from inner tube of automobile tire.

The accompanying reproduction of a photograph illustrates a bandage cut from an automobile inner tube which, I find, will maintain sufficient pressure to bring about obliteration of the bursal sac without greatly inhibiting the joint action. With this device my patients have been able to continue their usual occupations while under treatment. This treatment is not suitable in old chronic cases with thickened, fibrous sacs, or in acute suppurative bursitis.

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SATURDAY, AUGUST 12, 1922

PRODUCTION OF BILE PIGMENT WITHOUT INTERVENTION OF THE LIVER

The question of the origin of the bile pigments has played an important part in the interpretation of disorders of the liver. Until lately this organ has been held primarily responsible for the appearance of bilirubin and its companion pigments, whether in the bile which represents their normal habitat or in the blood and tissues wherein their occurrence is essentially an abnormality. The generally accepted hypothesis has been that the pigments responsible for the characteristic discoloration in jaundice are manufactured in the liver, whatever the cause of their absorption into the blood may be, and there is agreement in regarding the blood pigment, hemoglobin, as the precursor of the bile pigments.

Icterus may occur not only after obstruction to the outflow of bile, but also following hemolysis not associated with interference with the hepatic secretion. It is, of course, readily conceivable that in the latter case the liver cells are nevertheless concerned in the genesis of the bile pigment which happens to be returned directly into the blood stream instead of the biliary capillaries. Types of hemolytic icterus have been described in which the kidneys excrete bilirubin without the bile salts which might be expected to accompany it if the abnormality represented a mere perversion of bile production. Consequently, it has become more common in recent years to assume that in such cases of "dissociated" icterus—that is, bile pigments present in blood and urine unaccompanied by bile salts—the liver does not seem to be concerned.

In his lecture before the Harvey Society at New York in January, Whipple [1] reviewed anew the evidence that true bile pigment can be formed from hemoglobin within the body or by other than liver cells. Whipple and Hooper [2] showed that this transformation could be effected within two hours in the blood stream of the head and thorax with complete liver exclusion. The same workers [3] showed that hemoglobin can be transformed into bilirubin in the serous cavities within a period of twelve hours. It is regarded by Whipple as probable that the vessel endothelium and Kupffer cells are concerned in the vascular reaction.

Additional support to the view that hemoglobin can be changed to bile pigment and other substances, quite apart from essential liver cell activity, has lately been furnished [4] at the Massachusetts General Hospital, from a study of patients exhibiting paroxysmal hemoglobinuria. In a particularly instructive case, intravascular hemolysis was produced in a very restricted portion of the circulation. Thus, the products of hemolysis were completely isolated from the influence of the general circulation or of any of the organs of the body. Free hemoglobin was liberated, and reached its greatest concentration in the plasma in twenty minutes. Although still completely isolated, the free hemoglobin rapidly diminished in concentration. Accompanying this reduction in hemoglobin concentration there was a marked increase in the bilirubin content of the plasma, as indicated by a positive Gmelin test and by a change in color of the plasma from a reddish yellow to a dark golden yellow. As no bile pigment had been introduced into the blood of the isolated arm circulation at any time, it is evident that the free hemoglobin had undergone a transformation in the bilirubin in the local blood vessels, capillaries and tissue spaces. It was concluded that such experiments suggest that a large part of the transformation of hemoglobin into bilirubin could occur normally in the blood vessels. Possibly the greater portion of this change takes place ordinarily in the blood vessels of the liver because of the vascularity of this organ. If the catabolism of hemoglobin can actually be accomplished without the intervention of the hepatic tissue proper, the story of pigment metabolism in the body will need to be rewritten.

1. Whipple, G. H.: Pigment Metabolism and the Regeneration of Hemoglobin in the Body, Arch. Int. Med. **29**: 711 (June) 1922.
2. Whipple, G. H., and Hooper, C. W.: Icterus: A Rapid Change of Hemoglobin to Bile Pigment in the Circulation Outside the Liver, J. Exper. Med. **17**: 612 (June) 1913.
3. Hooper, C. W., and Whipple, G. H.: J. Exper. Med. **23**: 137 (Jan.) 1916.
4. Jones, C. M., and Jones, B. B.: A Study of Hemoglobin Metabolism in Paroxysmal Hemoglobinuria, Arch. Int. Med. **29**: 669 (May) 1922.

THE LYMPHATICS IN TUBERCULOSIS

In the conventional discussions of the physiology and pathology of the body, only scanty attention is usually paid to the lymphatic system. This is perhaps due to the fact that the latter does not obtrude itself so conspicuously as does the blood vascular system for observation; in part it is due to the lack of information regarding the "middleman" between the blood and tissues, and the spaces within which the lymph is confined. From the standpoint of nutrition and cellular function, the significance of the lymphatic system becomes emphasized by the fact that in no part of the body does the blood come into direct contact with the tissue cells, for it is confined in vessels with distinct

walls. The exchange of materials—food products and waste substances—goes on through the intermediation of extravascular fluids. Some of these are contained in the tissue spaces, others in what is now regarded as a closed system of vessels comparable with the blood vessels. In fact, a recent writer [1] has summarized the present-day belief by pointing out that the tissue spaces are not continuous with the lymphatics, any more than they are with the blood capillaries; indeed, in many situations in the body there are no lymphatics, yet tissue spaces and tissue fluids exist in them. The term "lymph," on this view, should be restricted to the fluid in the lymphatics. It may or may not be the same as the tissue fluids, we are further told; but until their identity has been established it is preferable and more exact to speak of tissue fluids and of lymph, regarding them as distinct from one another. Lymphatics are associated with the connective tissues and are much more limited in their distribution in the body than are blood vessels.

Soluble and diffusible matter finds no difficulty in gaining entrance into the circulation and thus becoming readily distributed in the organism. On the basis of the views expressed above, however, the lymphatics seem to be especially concerned with the intake and transport of undissolved particles, of which bacteria afford a typical example. They may find their way into the lymphatics through the agency of ameboid phagocytic cells which can penetrate the walls of confining systems. Once in the lymphatics, however, the path of progress is filled with numerous obstructions in the lymph glands.

In a report to the Medical Research Council in Great Britain, Herring and MacNaughton [1] of the University of St. Andrews have called attention anew to the function of the lymph glands, particularly in relation to the tubercle bacillus. In its early stages in the body, the fate of this micro-organism is much the same as that of other insoluble particles. The lymph gland is an extremely efficient filter, and allows solid particles to traverse it only when they arrive in too great numbers at a time, or when the gland has become disorganized. The British investigators point out anew that the lymphocytes of the lymphoid tissue act as a mechanical barrier against the escape of the particles, and eventually the barrier is made more complete by the appearance in it of fibroblasts and the formation of fibrous tissue. The foreign material is firmly enclosed, while the lymph sinuses are left open for the free passage of lymph.

In the case of tubercle bacilli, some of which may be destroyed in their encounter with body cells, their multiplication in a tuberculous focus in the lymph glands gives rise to an added complication through the possible production of soluble toxins. As Herring and MacNaughton further conclude, these easily transported products set up an intense lymphocytosis in other glands through which the lymph passes. The toxin or other chemotactic substance precedes the bacilli and renders the glands less pervious to them by narrowing the lymph sinuses and filling them with lymphocytes. The physiologic mechanism generally considered protective, we are further assured, may cease to be so, and may actually further the spread of the disease. What protection is afforded appears to be merely a mechanical one, and the gland in which the organisms are successfully immured by fibrous tissue, when this does occur, may remain a source of further infection if for any reason the protective barrier is broken down.

1. Herring, P. T., and MacNaughton, F. G.: On the Lymphatics and Lymph Glands: Their Rôle in Absorption of Foreign Particles and Tubercle Bacilli, Lancet 1: 1081 (June 3) 1922.

REGURGITATED ECTOPLASM

Medicine is concerned with phenomena which involve the fundamental sciences of physics, chemistry, biology and psychology. These departments of human knowledge do not represent a finished development; they are subject to the changes which progress in inquiry always brings about, and to the growth which is the glory of learning. Scientific discovery and sober reflection are forces which pave the way to advancement; there is nothing occult or mystical about them; they are natural rather than supernatural activities. Now and then the observer encounters phenomena which seem to defy interpretation on the basis of the known laws of the sciences. Under such circumstances there is often an almost irresistible temptation to ascribe the seemingly inexplicable to some unique "superscientific" potency. In former centuries, "animal spirits" were called on to assume responsibility for that which could not be explained by current knowledge. Subsequently, within the recollection of many among us, the physiologic activities that failed to admit of ready interpretation in harmony with the biologic sciences were designated as "vital."

"Vitalistic" explanations, implying reaction beyond the pale in which the laws of physics and chemistry apply in the body, have long been popular. The history of learning ought, however, to furnish adequate warnings of the unwisdom of venturing explanations which call for mere faith without demonstration. Many of the miracles of ancient days—and even of modern times—have been dissipated by the advance of knowledge. The rise of bacteriology has meant the fall of much superstition and ignorant belief. A trained mind will not say "I cannot know" when, in reality, it intends to convey the information, "I do not know."

In addition to the natural mystery which attends the limitations of knowledge in many fields of science—mystery such as that of the nature of heredity, the forces of absorption and secretion, the regulation of growth and development—there are conjured mysteries

which boldly flaunt their marvels into the faces of a receptive world. Occult science—an obvious misnomer—has long been used not only to secure homage from the gullible but also to attempt ridicule of the devotees of that organized common sense which true science represents. Recently "spiritism" has again come into the limelight as an instance of present-day credulity. Instead of mysterious levitation, the latest phase of the old scheme of transcending the known types of action, physical or psychic, consists in evoking manifestations of the "ectoplasm." Those who have the "will to believe" can supposedly observe the mediums giving "temporary immaculate birth to fugitive parental matters without organic growth and not capable of permanent life, but nevertheless capable of immediate temporary formations subject to tremendous exertions of imagination and will power expressed by the medium herself or through the medium by others present."

Here is something to tax the ingenuity of the incredulous scientist, we are assured. Manifestations of no mere protoplasm, the physical basis of life, but of a subtle ectoplasm of intangible tangibility and of outside origin. And have not great minds admitted seeking this remarkable substance, which is not living and yet takes the form of living matter in the indispensable cabinet? But the ways of the scientific skeptic are inquisitive. A group of psychologists and physiologists in Paris have attended the séances of an ectoplasm specialist and discovered not some rare, inexplicable emanation issuing from the medium's person but merely a substance coming from the mouth after a convulsive movement characteristic of emesis. And so the mystery of the ectoplasm is unmasked. "This formidable twentieth century biologic miracle," says the New York *Times*, "the three wise men of the University of Paris dare to call a vomit!"

CONTINUE THE EMBARGO ON DYES AND DRUGS

Unless prompt action is taken, the people of the United States may soon be paying exorbitant tribute to Germany once more as the price of recovery from disease and of the maintenance of health. Caught between the opposing forces in the conflict between the importers of German dyes and American dye makers, now being carried on in the Senate in connection with tariff legislation, the synthetic drug industry in the United States, built up as a result of lessons learned during the World War, is threatened with extinction. Again German domination of our drug markets looms up as a not remote possibility.

Those synthetic drugs found to be of service in the relief of suffering are mostly side products in the manufacture of dyes from coal tar, and their production, on a commercial basis, is not possible except when carried on along with the dye industry. With the outbreak of the World War in 1914, commerce with Germany was promptly cut off by the blockade established by her enemies, and we, although then a neutral nation, found ourselves not only without the dyes and essential drugs formerly supplied almost exclusively by Germany, but even without means for producing them. Driven by the conditions thus created by the blockade, and later impelled by conditions that resulted from our own entrance into the war, an industry was created within our own borders whereby needed drugs were produced and our civilians and military forces alike supplied with these necessary agents. When the armistice was proclaimed, we possessed an infant industry which experience had shown to be necessary to the continued welfare and safety of the American people, and particularly for the relief of the sick.

After careful consideration and debate, as a matter of sound economic policy deliberately determined on, and in order that this infant industry might live, a limited embargo was laid against the importation of synthetic drugs and of the dyes with which in their manufacture they were associated, so long as no necessity might exist for importing them. Up to the present time our domestic drug supply has been adequate, and as the result of competition among American manufacturers the sick have been able to supply all their needs at fair prices, instead of paying unconscionable tribute to foreign manufacturers. The synthetic drug industry now shows signs of growth and of increasing strength that promise sooner or later to make it a substantial factor not only in American prosperity but also in the maintenance of American health and national security.

Recently, however, a movement has been initiated that seems likely, if successful, to undo everything that has been accomplished; the protecting embargo is to be raised, and the still feeble dye and drug industries are to be protected only by certain proposed tariff schedules. Those most familiar with the situation assert that as a result the industries will die; that the duties proposed are inadequate to protect the industries, and that in the present stage of development of these industries no tariff schedule can be framed that will be adequate.

No sufficient evidence has been adduced to justify the opinion that American dye and synthetic drug industries will survive if they are thrown just now into competition with the highly organized, war-perfected factories of Germany, operated by poorly paid German labor. In the absence of such evidence, it would seem to be folly to take any action that may destroy them. The welfare of the people, and particularly the welfare of the sick, requires that the manufacture in the United States of synthetic chemicals for medicinal purposes be protected and built up. To that end it is necessary to protect and build up the dye industry, for without it these chemicals cannot be made on a commercial basis. In view of the public health aspects of the matter, the

medical profession should make its voice heard in no uncertain terms, protesting against the removal of the embargo. Write or telegraph to your senator today!

Current Comment

VAQUEZ-OSLER DISEASE

A quarter century has elapsed since the attention of clinicians was first clearly directed to a syndrome including erythrocytosis, general cyanosis, and enlargement of the spleen. Vaquez and Osler deserve credit for having brought this unique polycythemia into general notice, and for having dispelled the earlier belief that the malady represents essentially a splenic tuberculosis; hence the justification for the designation Vaquez-Osler disease. Increment in red blood corpuscles is known to occur in the cyanosis of congenital heart disease in which the circulation is too slow, and particularly as a response to the needs of respiratory exchange under conditions of oxygen shortage, such as occurs at high altitudes. Polycythemia under these conditions is a compensatory overproduction of red cells to facilitate the gaseous metabolism of the organism. In the cryptogenic type of polycythemia, however, the stimulus is not oxygen deficiency, so that the blood picture does not represent a beneficial response of the blood-forming tissues. The true pathogenesis of the disease remains unknown. In a recent address before the Royal Society of Medicine in London, Vaquez[1] ventured to liken the harmful, cryptogenic polycythemia that bears his name to the overgrowth of the blood, just as solid tissues may develop tumors. Thus, Vaquez's disease might be thought of as a benign tumor of red corpuscles, as leukemia is a malignant tumor of leukocytes. The conception of blood as a distinct tissue is by no means new; and the direction of attention to this view may be productive of helpful studies in the domain of a still obscure malady.

THE TREATMENT OF TYPHOID CARRIERS

In the course of routine bacteriologic examinations of the bile at necropsies, Murstad[2] of the Gade Pathologic Institute in Bergen found typhoid bacilli in a man, aged 58, who had had typhoid fever twenty years before, but who, so far as could be learned, had not been connected with any epidemics. Numerous typhoid and colon colonies were obtained also from different parts of the liver, from the wall of the gallbladder, and from gallstones in the latter. On the basis of these observations, Murstad studied twenty-two records in the literature of necropsies on typhoid carriers, in eighteen of whom typhoid bacilli were recovered. In nearly all the liver, as well as the gallbladder, contained typhoid bacilli, but it seems that the gallbladder is the principal permanent abiding place of the bacilli, and that if the gallbladder is removed, the bacilli soon disappear from the liver. At any rate, Murstad's analysis of the results of gallbladder operations in twenty-four carriers appears to support this view. In four of eight cases in which cholecystostomy was performed, and in fifteen of sixteen cases in which cholecystectomy was performed, the bacilli disappeared. In Murstad's own experience, however, cholecystectomy failed to eliminate the bacilli from the stools, indicating that a focus or foci of infection persisted somewhere in the liver or the intestinal tract. In view of the fact that the carrier is a most important factor in the spread of typhoid fever, which would become a very much rarer disease than it is even now if carriers could be cured promptly, it would seem that cholecystectomy should be made in carriers for the good of the community as well as for the good of the carriers themselves. Finally, Murstad emphasizes that while the treatment by disinfectants has no effect in the case of carriers with typhoid bacilli in the bile and stools—the so-called fecal carriers—urinary carriers may be sterilized by drugs, the most effective being hexamethylenamin and other members of the formaldehyd group. Vaccine treatment of carriers should be abandoned because it is ineffective.

1. Vaquez's Disease, Lancet, June 3, 1922, p. 1168.
2. Murstad: Med. Rev. 38: 215, 1921.

PROTECT AMERICAN CHEMICAL INDUSTRIES

Every reader of THE JOURNAL is urged to telegraph or to write at once to his senator at Washington, protesting against the removal of the embargo on synthetic drugs and on dyes. One of the benefits that came to the United States as a result of the World War is freedom from German control of its dye and synthetic drug industries. In bringing about that freedom, the embargo has been a most important factor. To remove the embargo now just as these industries are beginning to get firmly established invites disaster; the industries will be overwhelmed by a flood of foreign goods, let loose perhaps for the very purpose of destroying them in their infancy. On behalf of your patients and in the interest of the public health, protest against the removal of the embargo, and protest now.

SKIN COLORATION IN HEMATINEMIA

The demonstration that abundant intakes of foods relatively rich in carotinoid pigments, such as occur in carrots, tomatoes and other color-yielding plant products, may lead to a retention of carotin in the body sufficient to occasion discoloration of the skin has served to call attention to the possibility of erroneous diagnoses of icterus. Although superficial inspection may temporarily give rise to mistakes of judgment based on mere observation of persons exhibiting carotinemia, the detection of bile pigments by chemical means in the urine can always be depended on to dispel any doubt with respect to jaundice. Schumm[1] of Hamburg has called attention to an added type of brown-yellow discoloration of the skin in cases of marked hematinemia. The occurrence of hematin as an occasional free constituent of the blood has only lately received any considerable recognition. Schumm, who

1. Schumm, O.: Hämatin als pathologischen Bestandtheil des Blutes, Ztschr. f. physiol. Chem. 97: 32, 1916.

has described a number of cases, regards it as an unquestionably pathologic manifestation which has already been discovered in certain types of intoxication with both organic and inorganic poisons, and in pernicious anemia, malaria, some forms of sepsis, eclampsia and other diseases. The possible genetic relationships between hematin and the long recognized hematoporphyrin and bilirubin which may arise under pathologic conditions remains to be elucidated. It is important to realize the necessity of being on the lookout for the rarer forms of abnormal pigmentation.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

ALABAMA

Personal.—Dr. William H. Abernathy, Florence, recently resigned as county health officer of Lauderdale County, and has been appointed health officer of Pike County and will reside in Troy. He succeeds Dr. Douglas Cannon, who has been appointed state director of county health work.

New Sanitation Rules.—New regulations defining the sanitary requirements, facilities and conditions under which circuses, street fairs, county agricultural fairs and similar exhibitions may be held in Alabama were adopted by the state board of health, July 10. Permanent exhibition grounds are to be provided, with separate drinking fountains, plainly designated for each race. Persons suffering from any communicable disease are prohibited from handling or serving food or beverages on any exhibition grounds.——Temporary camps and communities within the state of Alabama must henceforth be conducted in accordance with special rules and regulations adopted, July 10. A community consisting of three or more dwellings of comparatively temporary construction, located close to one another, in existence for a period greater than seven days, but not to be occupied for an indefinite period, shall be regarded as a temporary community. This definition includes mining camps, highway and railroad construction camps, and religious, educational and recreational encampments. The territorial limits or boundary of such a temporary community or camp shall extend one-fourth mile (0.4 kilometer) in every direction from any house, cabin, tent or other structure which is occupied as a part of such unincorporated community. All structures intended for dwellings by human beings shall be of such nature as to furnish protection against undue exposure.

ARKANSAS

Fire Destroys Hospital.—The Stout Hospital at Brinkley was destroyed by fire, July 27. The loss is estimated at between $13,000 and $14,000.

New Nurses' Home at St. Vincent's.—Construction work has been started on a new three-story and basement nurses' home for St. Vincent's Infirmary at Little Rock. The residence is to cost approximately $100,000 and will accommodate eighty nurses. Sanders and Ginocchio of Little Rock drew the plans.

CALIFORNIA

Personal.—Dr. Frederick P. Gay, professor of pathology at the University of California, Berkeley, has been elected chairman of the division of medical science of the National Research Council.——Prof. Lewis M. Terman has been appointed head of the department of psychology at Stanford University, San Francisco, to succeed Prof. Frank Angell, who retired recently.

COLORADO

Joint Meeting.—A special meeting of the Denver Dental Association and the Medical Society of the City and County of Denver was held, August 8, to discuss the antivivisection bill.

DELAWARE

New Health Plan.—At a meeting of the board of health and representatives of the county medical organizations, at Wilmington, a complete set of regulations for the handling of cases of communicable diseases that may arise in the city was approved. The purpose of the new regulations is to bring Wilmington in line with the latest practice of the large cities of the country in handling epidemics or single cases of infectious disease, and by having the code in published form to make its methods known to all who are liable to come in contact with them. The rules will be printed for distribution.

FLORIDA

Near Epidemic of Dengue.—According to the reports of the city health officer of Tampa, dengue is rapidly assuming epidemic proportions in that city. Eleven cases were reported in two hours, July 7, and the total for that day reached forty victims of the fever. One hundred and twelve dengue patients have been reported since the count began.

Venereal Disease Control.—The fight against venereal disease being conducted by the Florida State Board of Health is proving very successful, it was recently announced. There were under treatment in the clinics of the state, during June, 1,199 cases of syphilis in males, 750 cases of syphilis in females, 136 cases of chancroid in males and 13 cases of chancroid in females, making a total of 3,101 persons under treatment during the month. This work is part of the work of the division of venereal disease, which is one of the divisions of the bureau of communicable disease of which Dr. George A. Dame is director. There are at present twelve clinics in the state for the free treatment of indigent cases and for a graduated fee in cases of the nonindigent who are not able to pay a full fee. Four of these clinics are conducted by physicians employed by the Standard Lumber Company.

GEORGIA

Child Hygiene Act Adopted.—A resolution creating a state agency to cooperate with the federal department of child hygiene for the expenditure of $19,530, apportioned Georgia under the provisions of the Sheppard-Towner Maternity Bill, was adopted, July 18, by the Senate.

ILLINOIS

Personal.—Dr. Otto E. Fink, Danville, has been appointed visiting oculist and aurist to the Danville Branch of the National Home for Disabled Volunteer Soldiers.

Hospital News.—A $250,000 addition to Our Saviour's Hospital at Jacksonville is being completed. An additional $50,000 is now being secured to purchase equipment and furnishings for the hospital.——The cornerstone for the Eastern Star Home for the Aged, to be erected in Rockford, was laid recently at appropriate exercises. The new building is being erected at a cost of $175,000 and will be completed by September 15.——Plans have been completed for the new hospital to be erected at Harrisburg, at a cost of $75,000.

Conference on Diphtheria Control.—August 2, about thirty public health officials, including the director of the state department of public health, the health commissioner of Chicago and a number of local health officers, met and discussed diphtheria control measures. Under the chairmanship of Dr. Herman N. Bundesen, the deliberation centered particularly around the use of toxin-antitoxin as an immunizing agent and the question as to whether or not a state-wide campaign in favor of general inoculation against diphtheria among children of preschool age would be advisable.

Successful Milk Conference Held.—Satisfactory progress was made at a conference held in Chicago, August 1, between more than 100 representative Illinois milk producers and milk dealers, and public health officials in about equal numbers. Those present unanimously adopted a motion favoring a state law that would guarantee perfectly safe milk supplies for municipalities. They also accepted with slight alterations an ordinance drafted and presented by the state department of public health as a model ordinance for adoption generally by municipalities. This ordinance was drawn up with the idea of especially stimulating pasteurization. As a means toward bringing about practical results from the conference, the permanent chairman, Dr. W. A. Evans, Chicago, was authorized to appoint three committees. The duty of one will be to edit and publish the minutes of the meeting; of another, to promote the adoption of the ordinance by municipalities; of the third, to render, in the course of one or two years, a report on practical legislative measures.

INDIANA

Typhoid Fever Compensable.—The appelate court of Indiana has decided that typhoid fever, contracted by an employee through drinking impure water furnished by the employer, is an "injury" by "accident arising out of and in the course of the employment" under the Workmen's Compensation Act, and as such is compensable.

IOWA

Eradication of Hay-Fever.—Under the direction of Prof. Clifford H. Farr of the botany department of the University of Iowa, Iowa City, the city officials and residents have cooperated in a campaign to rid the city of ragweed.

Hospital News.—The detention hospital of LaMars was recently destroyed by fire.——A new tuberculosis hospital was recently opened for Henry County in Des Moines.——The new Military Surgeons' Club of Iowa has approved plans for building a memorial hospital in Fort Dodge in honor of the physicians, nurses and enlisted men of the medical service who lost their lives during the World War. Plans call for a $40,000 structure, which will be started as soon as funds are available, which, it is expected, will be raised by popular subscription. The hospital would be used during camp periods of national guards and by the general public in time of disaster or epidemic.——The new east wing of the Jennie Edmundson Memorial Hospital, Council Bluffs, erected at an approximate cost of $200,000 was formally dedicated recently. It is four stories high, with an observatory attic and a physicians' clinic room overlooking the surgical laboratory below. Dr. Donald Macrae, leader of the Mobile Hospital No. 1 in France, during the World War, delivered an address.——The Allen Memorial Hospital, Allen Heights, is rapidly progressing, and it is expected to be finished this year.—— A new $120,000 building will be erected at St. Luke's Hospital, Mason City.

KENTUCKY

Hospital News.—A new tuberculosis hospital will be erected at Waverly Hills in the near future.——A new hospital will be erected at Maysville at an estimated cost of $35,000.——The Harrison Memorial Hospital, Cythiana, was dedicated, July 4.——A new hospital is practically completed at Whitesburg.

LOUISIANA

New Dean for Tulane.—The board of administrators of Tulane University, July 31, elected Dr. Charles C. Bass as dean of the School of Medicine.

New Baptist Hospital.—The Home Mission Board of the Southern Baptist Association has been instructed to build a general and research hospital in the city of New Orleans, to cost approximately $2,000,000.

Appeal for Hospital Funds.—The Charity Hospital, New Orleans, has requested a bond issue of $300,000, which Governor Parker vetoed as unconstitutional after the bill had passed the Senate and the House, recently. The money is needed for an additional building for interns and also for nurses. The interns' home was erected thirty-three years ago to house eighteen interns. There are now thirty crowded in, and others have to seek accommodation elsewhere. The nurses' home is seventeen years old and was originally intended to accommodate 102 nurses. The minimum requirement now is space for 200 nurses.

Smallpox in Oil Camps.—The existence of smallpox in oil regions of Louisiana has caused Dr. Dowling of the state board of health to issue warnings that all persons whose business takes them to these regions should be vaccinated. One hundred and fourteen cases occurred at Haynesville, it was stated in the report of communicable disease, for the week ending, July 22. Dr. Dowling states that for several months, despite all efforts, smallpox has been increasing in the northern section of the state. In the oil field regions, owing to the fact that there has been such a rapid increase in the population that sanitation cannot keep pace with it, typhoid is very prevalent.

MARYLAND

Personal.—Dr. Valcoulon L. Ellicott, Baltimore, has been appointed epidemiologist in the New York State Department of Health. Dr. Ellicott is a graduate of the medical school and the school of hygiene and public health of Johns Hopkins University.——Dr. Joseph Colt Bloodgood, Baltimore, was the guest of honor at a luncheon given by Dr. E. C. Coffey to thirty-five physicians at the University Club, Portland, Ore., July 13.

MASSACHUSETTS

Personal.—Dr. Walter B. Cannon, professor of physiology at the Medical School of Harvard University, Boston, gave a Mayo Foundation lecture at the Mayo Clinic, June 20. His subject was "The Effects of the Emotions on the Body."——Dr. Reid Hunt of the Harvard Medical School, Boston, has been elected on the editorial board of *Physiological Reviews* for 1922.

Physician Sentenced.—About a year ago, the Massachusetts State Board of Registration in Medicine revoked the license of Dr. Charles I. Granstein, Brockton, the charge preferred being criminal assault and the performing of a criminal abortion. Now it is reported that Dr. Granstein has been sentenced to serve a term of from five to seven years in the state prison on the charge of criminal assault. The charge of performing a criminal abortion was placed on file.

Mickle Fellowship for Dr. Cushing.—The faculty of medicine of the University of Toronto, Canada, has awarded the Charles C. Mickle fellowship of $1,000 to Dr. Harvey Cushing of Harvard University. This fellowship is awarded to the member of the profession "considered to have done most during the preceding ten years to advance sound knowledge in medical art or science." Dr. Cushing accepted the award, but instead of keeping the money has requested the university to send one of its graduates to work with him for one year. He will give the money to the selected graduate.

MICHIGAN

Physician's Fees.—It is announced that a uniform fee has been adopted by all members of the Gogebic County Medical Society.

Malaria Campaign.—The state health commissioner has instituted a malaria campaign to prevent an increase of this disease, which attacked more than 150 people last year. It is feared that the anopheles mosquito has survived the mild winter and will appear in large numbers again this year.

Chiropractors Pay Fines.—At the annual meeting of the Michigan Chiropractic Association, a resolution was passed unanimously pledging its members to serve jail sentence in the event of conviction under the Michigan Medical Act and to refuse to pay fines even if the court allowed an option in the case. Nevertheless, within a week, some half dozen of the members of the association paid fines of $200 each rather than serve six months in the house of correction.

Supreme Court Upholds Licensing Board.—A chiropractor convicted of practicing medicine without a license at Cadillac last December appealed the case to the supreme court on the following contentions: (*a*) That "certificate of registration" and "license" used in the act were not synonymous terms; therefore, two offenses were charged in the information; (*b*) that the drugless section of the act is discriminatory, unreasonable and arbitary, and, therefore, unconstitutional and void; (*c*) that the court was not justified in directing a verdict of guilty when the facts in the case were not disputed and, therefore, held to be admitted. The court held unanimously against the contentions.

Health Clinic Work Enlarged.—The clinic division of the state department of health, and the lecturing, moving picture and exhibit units will combine and tour the state, conducting health institutes, it was announced recently by Dr. R. M. Olin. In addition to the children's and tuberculosis divisions which formerly comprised the clinic, an infants' unit, two lecturers, and an organizer will be included. The increase in personnel will make possible more intensive work in counties visited. Clinics will be held in the larger towns and county seats, while lecturers will visit every community. Health institutes will be held in any county on request of individuals or organizations. The personnel of the newly organized staff are Dr. Frank Rose, head of the children's unit; Dr. Charles A. Wilson, head of the tuberculosis division; Dr. Florence Browne, head of the infant unit, and Dr. Frank Poole, lecturer.

MINNESOTA

Fund to Improve Auto Camps.—An additional appropriation of $15,000, with legislation to guarantee its effective expenditure, will be asked of the next legislature by the state board of health, for the supervision of the state tourist camps. The importance of extreme care in sanitation matters

among tourists is shown in a report covering the period from 1913 to 1921; showing that 365 cases of typhoid fever in Minnesota were contracted outside the state while the victims were on vacation trips.

Hospital News.—A new $11,000 hospital for contagious diseases will be erected in Owatonna. Construction will be commenced shortly.——An addition will be made to the Naeve Hospital at Albert Lea. The addition will be a two-story and basement building of brick and concrete.——Plans have been completed for the Bethany Home for Children, a new fireproof institution for West Duluth. The building will be erected at a cost of $80,000.——A campaign for $100,000 to establish a Methodist hospital at Wadena is under way.

Personal.—Dr. Lawrence F. Sutton, Mazeppa, and Dr. William F. Wilson, Lake City, were recently elected president and secretary, respectively, of the Wabasha County Medical Society.——Dr. Charles L. Scofield, Benson, has been elected president of the state board of health to succeed Dr. Egil Boeckmann, St. Paul, who resigned, July 18, following his appointment to the board of regents of the University of Minnesota. Dr. Solon Marx White, Minneapolis, was elected vice president of the board succeeding Dr. Scofield.

MISSISSIPPI

Hospital Plans.—The contract has been let for the erection of the new East Mississippi Charity Hospital at Meridian, for $78,000. The institution will be erected on a 19 acre site given by the state.——A deed for the property of the Mississippi Centennial Exposition Company at Gulfport has been given to the United States government, which will establish a $1,000,000 hospital on the site.——Ground has been broken for the new Martha Ross Hospital at the Mississippi Woman's College at Hattiesburg, of which Dr. J. L. Johnson is president.

New School Health Rules.—At a meeting of the state board of health in Jackson, the following rules and regulations on sanitation were adopted for the schoolhouses of the state:

Heating, light and ventilation: All schools and colleges in Mississippi shall be properly heated and lighted and be provided with proper methods of ventilation sufficient to furnish each pupil an adequate amount of fresh air. The air in any schoolroom shall be kept at all times in a wholesome condition and exercises shall be suspended as often as necessary in order to remove the air from any room, the ventilation of which is defective. The schoolhouse shall provide for admission of light from the left, or from the left and rear of the pupils and the total lighting area shall be at least 20 per cent. of the floor space. The temperature in the school shall be maintained as nearly as possible at from 68 to 70 F. No schoolroom shall be swept until all exercises have been completed for the day, and no school shall be swept during the hour just before school opens.

Drinking water: Abolition of the common drinking cup, and proper care must be taken by the school trustees to prevent contamination of the water supply of the school.

MISSOURI

Farewell Banquet for Physician.—The Pettis County Medical Society gave a farewell dinner in honor of Dr. Everett A. Wood, Sedalia, July 6. Dr. Wood has practiced in Sedalia for twenty-seven years and was the founder of the former Maywood Hospital. He has retired from practice and will reside in Hemet, Calif., in the future.

NEW HAMPSHIRE

Hospital News.—Plans have been completed for the erection of a $100,000 addition to Laconia Hospital, Laconia.——The contract has been let for a new $100,000 building for the New Hampshire Memorial Hospital for Women at Concord, of which Dr. Marion L. Bugbee is superintendent.

NEW MEXICO

New County Physician.—Dr. Edmund M. Clayton, Albuquerque, has been appointed physician to Bernalillo County to succeed Dr. John F. Pearce.

NEW YORK

Club to Conduct Child Health Work.—The City Club of Albany has inaugurated a child health campaign for Albany County. The campaign will include health consultations for rural districts. The healthmobile of the state department of health will tour the country in advance of the consultations.

Personal.—Dr. Frankwood E. Williams has been appointed medical director of the national committee for mental hygiene to succeed Dr. Thomas W. Salmon, who resigned in January to become professor of psychiatry at the College of Physicians and Surgeons of Columbia University.——Dr. Harry E. Plotz, who is engaged in relief work in Poland, sailed for Europe, July 22.——Dr. S. Josephine Baker has been appointed a member of the health committee of the League of Nations. Dr. Baker, who is director of the Bureau of Child Hygiene, New York City, recently completed twenty years of service with the city health department.——Dr. Joseph A. Blake and Dr. J. Bentley Squier sailed for Europe on the *Aquitania*, August 2.

Course of Instruction in the Hygiene of Maternity, Infancy and Childhood.—The state department of health, through its division of maternity, infancy and child hygiene, plans an extension course in the hygiene of maternity, infancy and childhood, for public health nurses. The course will consist of some study, lectures and demonstrations at a central place, to be selected for each sanitary supervisor's district, and probably actual practical work at a maternity center, probably in New York City. There will be no charge for the course. Applications should be addressed to the Division of Maternity, Infancy and Child Hygiene, State Department of Health, Albany. The general correspondence course will be given by New York University and Bellevue Medical School.

New York City

Public Safety Campaign.—A broad and intensive campaign for public safety will be begun here shortly by the Safety Institute of America, under the leadership of Judge Elbert H. Gary. Invitations have been issued to eighty-seven leaders in civic, industrial, social and administrative circles to aid him. It is hoped to duplicate in this city the work that has been so successful in various industrial plants, where accidents have been materially reduced.

Health Center Fights Medical Frauds.—The East Harlem Health Center, which is sponsored by the New York chapter of the American Red Cross, cooperating with twenty-one other health and social agencies, has initiated a campaign to drive out of the neighborhood all quacks and illegal practitioners of medicine. The *Medical Week*, the official organ of the Medical Society of the County of New York, states that the society will support any movement to clean up in similar fashion any part of the city, and if the effort in the East Harlem district is successful, it would like to see the Red Cross extend this activity to the entire city.

NORTH CAROLINA

Illegal Practitioner Extradited.—It is reported that George W. Titman of Salisbury, charged with practicing medicine without a license, was tried in Rowan County court, July 21, and given one year in the chain gang. Sentence was suspended twenty-four hours to allow to him leave the state of North Carolina for good.

Aid Asked to Negro Industrial School Hospital.—Announcement has been made that a hospital for colored people has been established in connection with the industrial school at Laurensburg, and that aid is required for developing the hospital and the library in connection with the nursing school, as well as for the purpose of obtaining much needed hospital equipment, including a sterilizer, a microscope and clinical laboratory apparatus. Small gifts of either money or equipment may be sent to Professor McDuffie, care of the Laurensburg Normal School, Laurensburg.

OKLAHOMA

Hospital News.—Plans are being made for the erection of a union hospital at Duncan.——The board of commissioners of Carter County have appropriated funds for the erection a new county hospital at Ardmore. Plans are being prepared for the new structure, which will cost approximately $150,000.——Bids were asked, July 16, for five buildings, including a nurses' home and vocational building for the Oklahoma Soldiers' Memorial Hospital, to be erected at Honor Heights, Muskogee, by the Soldiers' Relief Commission of the State of Oklahoma. The Soldiers' Tubercular Sanatorium, erected by the relief commission at Sulphur, will be opened to the public the first week in August. An outpatient department will be opened at the same time. The commission operates another hospital at Guthrie.

PENNSYLVANIA

Philadelphia

Support Urged for Medical Research.—Dr. Paul A. Lewis, director of the laboratory of the Henry Phipps Institute, has issued a pamphlet urging the appreciation and support of the

public in the interest in research of the medical school in this city, that the cultivation of medical research may mean better medical service.

RHODE ISLAND

Personal.—Dr. Asa S. Briggs, Ashaway, has been appointed head of the Rhode Island State Home and School, by the Penal and Charitable Commission, Providence. Dr. Briggs is president of the Washington County Medical Society and associate editor of the *Rhode Island Medical Journal.*

Illegal Practitioner's License Revoked.—The secretary of the state board of health states that, at a meeting of the board, July 13, it was voted to revoke the license of Raymond E. Connors, who claimed to be a graduate of Tufts Medical College, 1920. Connors presented proper credentials as to his graduation, but these credentials, it is reported, were obtained by fraud.

SOUTH CAROLINA

Chiropractor Convicted.—It is reported that I. E. Johnson, chiropractor of Spartanburg, was convicted on a charge of practicing medicine without a license, and was sentenced to serve ninety days in the chain gang.

SOUTH DAKOTA

Health Officer Appointed.—Dr. John R. Westaby, Madison, has been appointed health officer of Lake County to succeed the late Dr. John Duff, who had occupied that position for the past twenty-five years.

TENNESSEE

Appointments to Veterans' Hospital.—Dr. Chester D. Allen has been appointed officer in charge of the U. S. Veterans' Hospital No. 88, Memphis, formerly the Methodist Hospital. Dr. John W. Tippie is executive officer or secretary, and Dr. A. G. Holland has been appointed assistant surgeon and staff officer.

TEXAS

Hospital News.—Final plans for the Potter County Hospital to be erected at Amarillo at a cost of $250,000, have been accepted by the county commissioners.——The Frances Ann Lutcher Hospital, Orange, will open a free medical and dental clinic at that institution, August 1. This has been made possible by the generosity of Mr. and Mrs. Luther Stark in furnishing the rooms and equipment. A full-time social service worker will be employed in this work. The physicians of the Orange County Medical Society have signified their willingness to devote a portion of their time to these clinics.——A new nurses' home will be erected at Dallas for St. Paul's Sanatorium, with accommodations for 150 nurses. ——The Knights Templar Hospital at the Home for Aged Masons, Arlington, is building a twelve bed addition to its sixteen bed plant, with an additional capacity, in emergency, of about twenty beds, forty-eight in all.

WASHINGTON

Plaintiffs Win from Surgeons.—The Yakima *Herald* states that Mr. and Mrs. O. M. Jones, in their $7,500 malpractice suit against Drs. Charles A. Riemcke, Yakima, and William M. Munsell, Grandview, were awarded $5,000 damages by a superior court, June 21.

WISCONSIN

Physician Fined.—The *Wisconsin Medical Journal* states that Dr. Oscar Schnetzky, Princeton, was fined $400 and costs of $200 in the circuit court recently, for illegal transportation and sale of liquor.

Personal.—Dr. and Mrs. Archibald O. Shaw, Ashland, have recently returned from a trip to Australia, New Zealand and the South Sea Islands.——During the absence of Dr. Clarence A. Baer, who is taking a course of study in Paris, Dr. A. A. Evans is acting as chief of staff of the Milwaukee Children's Hospital.——Dr. Karl Doege, Sr., and Dr. Karl Doege, Jr., Marshfield, are leaving for one year's trip in Europe.——Dr. Carroll D. Partridge, formerly in charge of the Milwaukee health department laboratories and recently health commissioner of Wausau, has returned to Milwaukee to take charge of the clinical department of the Seelman laboratories, of which Dr. John J. Seelman is director.

Society News.—The annual meeting of the Milwaukee Neuro-Psychiatric Society was held, June 22, in the Milwaukee Athletic Club. Dr. Lorenz, director of the Wisconsin Psychiatric Institute spoke on "Treatment of Central Nervous Syphilis by New Remedies."——Dr. Harry B. Moe, Blanchardville, and Dr. Peter W. Leitzell, Benton, were elected president and secretary, respectively, of the Lafayette County Medical Society, at the annual meeting, June 27.—— At the meeting of the Dane County Medical Society in Stoughton, June 13, it was voted to close offices Saturday afternoons.——At a special meeting of the Marinette County Medical Society, Dr. Arthur J. Patek, Mt. Sinai Hospital, Milwaukee, was the guest of honor, and spoke on the University of Wisconsin extension service.

Maternity and Infant Welfare.—The state board of health will establish a maternity and infant health center, with a physician and a nurse to manage its affairs, in every county that provides rooms and equipment, under plans announced for administration of the Sheppard-Towner Maternity Bill. Under this legislation, Wisconsin receives $10,938 for the year ending June 30, 1922, and $27,751 for the year ending June 30, 1923. In these health centers, complete physical examinations will be made for children under school age and expectant mothers. Little mothers' classes, to teach girls how to care for babies, will be promoted, together with illustrated lectures and moving pictures. Personnel to carry out the provisions of the act will consist of one physician to visit health centers, six or eight part-time physicians in various localities, and ten public health nurses to organize the health centers and to do follow-up work in each county.

WYOMING

Many Cases of Spotted Fever.—The state board of health announces that there were fifty-four cases of Rocky Mountain spotted fever reported during the last three months, and fourteen deaths, a mortality rate of about 26 per cent. This year, the secretary of the health board states that the disease has occurred in both sexes and at practically all ages, the youngest victim being 5 years of age.

PHILIPPINE ISLANDS

Independence Mission.—Drs. Justo Lukban, Antonia G. Sison, Jose Albert and Juan Nolasco sailed for the United States, recently, having been appointed members of the Second Philippine Independence Mission. Dr. Lukban was mayor of Manila at one time, while Drs. Sison and Albert are members of the medical faculty of the University of the Philippines. Dr. Nolasco is a member of the Philippine House of Representatives.

Hospital, Dispensaries and Health Centers.—The Philippine Islands Health Service plans to build hospitals in every provincial capital, and health centers in largely populated districts. Provision is already made for such hospitals at Laoag and Sorsogon, and will be made later for Iloilo, Negros Occidental and Negros Oriental. It also plans to provide towns and the larger villages with well-stocked dispensaries. Several clinics will be conducted in the provinces, like the clinics on yaws and tropical ulcers, conducted in Parñaque and Pangasinan in 1921, and are now being conducted at Loaog.——A hospital for women and children will be erected at San Fernando, for which land has already been purchased.

CANADA

Public Health Campaign.—Under the direction of the Royal Sanitary Institute of London, England, a special health week will be conducted in Calgary, Alta., October 8-14.

Society Changes Name.—At the annual meeting of the Canadian National Council for Combating Veneral Disease, the name was changed to the Canadian Social Hygiene Council. The new offices of the organization will be 207 York Building, Toronto.

New Medical Society.—At a meeting of physicians from the provinces of Quebec and Ontario at Toronto in June, the Canadian Society for the Study of Diseases of Children was organized. Physicians in other branches of medicine, whose work has a close relation to the field of pediatrics and child welfare, will also be eligible for membership. Officers elected were: president, Dr. Alexander B. Blackader, Montreal; vice president, Dr. Alan G. Brown, Toronto, and secretary-treasurer, Dr. Edward A. W. Morgan, Toronto.

Health Officers' Association.—The eighth annual meeting of the Health Officers' Association of Ontario was held, recently, in Toronto, under the presidency of Dr. John W. Shaw of Clinton. Dr. Milton J. Rosenau, professor of medi-

cine and hygiene at Harvard University, Boston, read a paper on "Food Poisoning." The following officers were elected for 1922-1923: president, Dr. Douglas V. Currey, St. Catharines; vice presidents, Drs. Theodore Lomer, Ottawa, and Theodore J. Park, Amherstburg, and secretary, Dr. J. J. Middleton.

Cooperation of Health Units.—A round table conference of voluntary agencies was held during the week of the Canadian Public Health Association meeting in St. John, presided over by Dr. Roberts, who explained that the object of the meeting was to coordinate the work of the various organizations and to attempt to make arrangements which would prevent the possibility of overlapping in time, energy and expense. Representatives from the following organizations attended the meeting: Canadian Red Cross Society, Col. Nasmith, C.M.G.; Victorian Order of Nurses; Department of Health, Ottawa, Dr. Helen MacMurchy and Dr. John J. Heagerty; Canadian Medical Association, Dr. Hutchinson; Canadian Public Health Association, Committee on Policy; National Committee on Mental Hygiene, Dr. William H. Hattie; National Council for Combating Venereal Disease, Dr. Gordon A. Bates; Canadian Association for the Prevention of Tuberculosis, Dr. Robert E. Wodehouse; Provincial Medical Officers of Health of Nova Scotia, Dr. H. A. Chisholm; Alberta, Dr. Laidlaw; New Brunswick, Dr. G. G. Melvin; Ontario, Dr. R. R. McCleanahan; Imperial Order, Daughters of the Empire, Miss Liggett; Women's Institutes, and Public Health Nurses.

Hospital News.—The Quebec government has given the Laval Hospital $100,000 with which to erect a new wing for tuberculous children. Work on this structure will be started soon.——A new orphans' home will be erected at Kitchener, Ont., this year, at a cost of about $70,000. Plans have been drawn and approved for the institution.——The Sisters of Moncton, New Brunswick, are to have a new hospital in that city, it is announced. The institution will be known as the Catholic Hospital and will be erected at a cost of $500,000. ——The Misericordia Hospital, Edmonton, Alta., will have a $250,000 extension and will increase its capacity seventy beds. Construction work will be started this summer.——The Toronto Department of Health is building a nurses' home in connection with the Riverdale Isolation Hospital. The plans call for a building that will house 150 nurses. It is expected that it will be ready for occupancy in the autumn.——The new Ontario Hospital at Whitby, for the mentally afflicted, was officially opened recently by the Premier of Ontario.—— According to an emergency measure passed by the board of health, the medical ward of the General Hospital, Hamilton, Ont., will be converted into an isolation hospital for poliomyelitis, which is very prevalent in that city.

GENERAL

Death of Japanese Chemist.—Dr. Jokichi Takamine, known for his work on diastatic ferments and the active principles of the suprarenal glands, died in the Lenox Hill Hospital, New York, July 22. Dr. Takamine was born in Tokyo in 1854 and graduated in chemical engineering from the University of Tokyo at the age of 25.

Warning.—Dr. Oscar O. Miller, Louisville, Kentucky, writes that a man calling himself Frank Wayne is imposing on the medical profession in various cities. As soon as he arrives in the city, he goes to one of the prominent throat specialists, telling him he is suffering from tuberculosis and is endeavoring to secure funds to go West. He evidently has some slight affection of the larynx, as he invariably secures a letter of recommendation from the physician, certifying that he has tuberculosis of the larynx. He takes this to a notary public and has it sworn to, and then has it approved by the chief of police. Armed with this, he solicits funds and then moves on to another city.

Congress of French-Speaking Physicians of North America. —The *Union Médicale du Canada* for August brings the details of this meeting which is to be held at Montreal in September. It is the seventh Congrès des médecins de langue française de l'Amérique du Nord, and the general secretary is Dr. St.-Pierre, 703 rue St.-Hubert, Montreal. The Paris faculty of medicine has appointed Professor Achard as its representative at the meeting. He is professor of pathology and general therapeutics. A party of French physicians also are planning to attend the meeting. The main subjects appointed for discussion are toxic goiters, vaccine therapy, and expert medical testimony in workmen's compensation cases.

Public Health Service Reserve Officers Meet.—The Association of Reserve Officers of the United States Public Health Service held its annual meeting in Washington, D. C., during the last week in July. This association comprises in its membership doctors who are engaged in hospital work in the Veterans' Bureau and in the Public Health Service. All members of the association are themselves ex-service men. The association has for its purpose the advancement of medical and hospital work of the government, the care and treatment of ex-service men and the welfare of the doctors who are connected with that work. Because of inadequate legislation, it is claimed the status of the reserve officers in the public health service is uncertain. It was stated that the functions of the public health service cannot be utilized to the fullest degree unless the medical personnel composing it is established on a sound basis. The activities of this association will continue to be employed to place the reserve medical officers of the public health service on a more stable basis and one commensurate with the increased responsibilities and duties in the care and treatment of ex-service men, but will also continue to be employed in the regular work of the United States Public Health Service. Unless proper inducements and ample provisions are made for the medical officers in the Public Health Service permanently to continue in their work, it was said the medical and public health work of the service must necessarily suffer because trained and well qualified doctors will not be attracted to the service or remain permanently in it. The following officials were elected by the association of reserve officers for the ensuing year: president, Dr. T. H. Scott; treasurer, Dr. P. S. Rawls, secretary, Dr. C. T. Messner, 3224 Northampton St., N. W., all of Washington, D. C.

Reported No Action on "Filled Milk" Bill.—As a result of the testimony presented before the subcommittee of the Senate, of which Senator McKinley of Illinois is chairman, it is probable that no action on the Voigt Filled Milk bill will be taken by the Senate committee at this session of Congress. The meetings of the committee this week were for the purpose of hearing those who opposed the passage of the measure. The charge was made before the committee that behind the Voigt bill is a desire to injure the business of one company which manufactures filled milk. Numerous witnesses appeared before the committee, including Dr. E. V. McCollum of Johns Hopkins University, who stated that filled milk is not deleterious; that it is a healthful product provided it is used in such combination with other foods that it would not interfere with a satisfactory diet; that there was nothing poisonous about it. Under examination, he made the statement that skimmed milk, which is used in making filled milk, contains all the food value of whole milk, except that it has less of the so-called "vitamin A." Dr. Eugene Aggers, an economist of Columbia University, New York, told the committee that filled milk makes a real economic contribution to the country, giving an outlet for a tremendous amount of skimmed milk, a valuable food, which otherwise would be lost. He insisted that in the long run the filled milk industry would be a benefit to the dairy industry, and would tend to stabilize the latter. Among others who testified were Dr. Joseph Brenneman, chief of the medical department, Children's Memorial Hospital, Chicago; Dr. Philip M. Stimpson, New York; Dr. A. J. Carlson, Chicago; Prof. O. Erf, in charge of dairying, Ohio State University; Dr. Charles J. Brinn, medical inspector of baby health stations, New York; Dr. Casimer Funk, Columbia University, New York; Dr. Wm. E. Ramsey, Perth Amboy, N. J.

LATIN AMERICA

New Porto Rican Journal.—Physicians of the Mayaguez and Western Polyclinic, Mayaguez, Porto Rico, have begun the publication of a monthly entitled, *El Policlínico.* The editor is Dr. P. Perea Fajardo. The journal contains an average of twenty pages.

Tribute to an Argentine Physician.—An unusual tribute was paid to Dr. Emilio R. Coni, the Argentine sanitarian, when a number of the most prominent physicians of São Paulo, Brazil, sent a letter endorsing his appointment as head of the Argentine Public Health Service.

Cuban Delegates to the Brussels Tuberculosis Congress.— At the Third International Antituberculosis Conference held at Brussels, July 11-13, the Cuban government was represented by the following delegates: Drs. Julio Arteaga, Eugenio Albo, Fernando Remsoli and F. Javier de Velasco.

Mexican Society Appoints Officers.—The medical society of the state of Yucatan has appointed the following officers for the year 1922-1923: president, Dr. Narciso Souza; vice president, Dr. Abelardo Lara; secretary, Dr. Silvio Hernández; subsecretary, Dr. Eugenio Paloma; treasurer, Dr. Alberto

Correa; undertreasurer, Dr. Carlos Casares; editors, Drs. José E. Contreras and Romualdo Manjarréz. The headquarters of the association are at Mérida.

Tribute to Dr. Risquez.—The *Gaceta Médica de Caracas* for April, just received, relates that the fiftieth professional anniversary of Dr. F. A. Risquez of Caracas was to be celebrated by the Academia Nacional de Medicina, April 27, and a gold medal presented to him. He was president of the Academia at one time, and has been rector of the university, director and professor, and has published a number of important communications, especially on tropical medicine. One of his latest articles was summarized in THE JOURNAL, Oct. 22, 1921, p. 1374.

Argentine Hospitals.—According to information received from Argentina, there are now 243 hospitals and dispensaries, supported either wholly or partially by the Argentine government. These hospitals are divided as follows: Buenos Aires (city), 38; National Territories, 7; Buenos Aires Province, 75; Santa Fe Province, 17; Entre Rios Province, 22; Cordoba Province, 19; Tucuman Province, 8; Corrientes Province, 16; Mendoza Province, 11; Santiago del Estero Province, 4; Salta Province, 8; San Luis Province, 7; San Juan Province, 3; Catamarca Province, 6; La Rioja Province, 2, and Jujuy Province, 5. The three largest hospitals in Argentina are Las Mercedes, 1,672 patients; Francisco J. Muñiz, 1,000 patients; Torcuato de Alvear, 1,391 patients.

Personal.—Professor Andreatti of the University of Vienna, has given at the Asunción Medical School, Paraguay, a series of stereopticon lectures on tuberculosis, its prevention and treatment.——Dr. R. Vega Gómez, Jr., of San Salvador, El Salvador, has been sent by the Salvador Medical School and the Rosales Hospital to take a course in roentgen-ray work in a New York school.——Dr. Ramón Ruiz Arnau, who has been visiting in Porto Rico for a few weeks, has returned to the United States.——Dr. José Gómez Brioso of San Juan, Porto Rico, has left for a month's trip to the United States. ——The *Repertorio* of Bogota mentions that Dr. C. Torres Umaña, the pediatrician, has left for a trip to the United States and Europe. Dr. Luis Zea Uribe, professor of bacteriology, has left for Germany, and Dr. Rafael Meoz and his wife are making a tour of Europe.——The *Semana Médica* states that Prof. V. Delfino of Buenos Aires has been appointed correspondent of the Italian Institute for Hygiene and Public Assistance which was described in these columns, July 15, page 226.

FOREIGN

Cancer Institute in India.—It is reported that plans have been made to establish a cancer institute at Bondoeng, India. It is to be connected with a hospital and medical laboratory already in operation there.

French Donate to Pasteur Celebration.—The French senate has unanimously voted 2,000,000 francs to observe the one hundredth anniversary of the birth of Louis Pasteur. The senate in voting the appropriation described Pasteur as the "Symbol of French science."

Women in Japanese Medical Colleges.—The Kyushu Imperial University, Fukuoka, Japan, has recently opened the departments of medicine and engineering to women students. Women are barred from attending the University of Tokyo and most of the other colleges of the better class.

Antituberculosis Work in Switzerland.—The Swiss government has recently granted an appropriation of 1,000,000 francs for antituberculosis work in that country during the current year. A marked increase in tuberculosis has taken place in Switzerland since the war, the *Bulletin des Eidgenossischen Gesundheitsamtes* announces.

Scientific Museum to Be Opened.—A petition, which was presented at the last session of the lower house, Japan, regarding the establishment of a fully equipped, up-to-date scientific museum, was approved. It was stated by the petitioners that scientific knowledge among the Japanese is far below that of Europeans and Americans.

Medical Periodicals in Russia.—This year has witnessed the birth of a number of medical journals in Russia. Copies have been received of the *Meditsinskaya Gazeta* of Moscow, the *Meditsinskii Journal* of Kiev, the *Klinitcheskaya Meditsina* of Moscow and the *Russkii Ophthalmologitcheskii Journal* of Moscow. Syphilis, anaphylaxis, protein therapy and percussion and auscultation of the kidneys are the main subjects discussed.

Insanity Pleaded for Criminals.—The lord chancellor of England has appointed a committee to report on the changes which are desirable in the existing law, practice and procedure relating to criminal trials when a defense of insanity is raised. The members of the committee are Sir Richard Muir, Sir Ernest Pollock, Sir Archibald Bodkin, Sir Ernley Blackwell, Sir Leslie Scott, Sir Herbert Stephen and Sir Edward Troup.

Hospital Cooperation.—At the National Conference of Local Voluntary Hospital Committees held recently in London, mutual benefit and cheaper working for a system of hospitals conducted on national cooperative lines was discussed. It was stated that if stores, medicines, drugs, equipment, etc., were purchased on a cooperative basis, it would do much to lessen expenditure, each hospital or unit reaping the advantages of joint purchases.

British Medical Women's Federation.—The fifth annual meeting of the federation was held in London, May 6, under the presidency of Dr. Mary Sturge. The following officers were elected for the ensuing year: president, Lady Barrett, M. D.; vice presidents, Miss Frances Ives and Dr. Mabel Ramsay; honorary treasurer, Dr. Louisa B. Aldrich-Blake; honorary secretary, Dr. F. M. Dickinson Berry, and medical secretary, Dr. C. Violet Kelynack.

New Japanese Maternity Hospital.—The Charity Maternity Hospital at Shibuya was formally opened, June 10. This institution was financed and equipped by the Japan Red Cross Society. The minister of war, the mayor of Tokyo and Mr. Hirayama, president of the Japan Red Cross Society, were among the guests present. After the reading of the congratulatory addresses, the building was declared formally open and the general public was admitted to inspect it.

Polish Graduates Visit America.—Six medical students from Polish universities have been selected to come to America to finish their studies, preparatory to entering the Institute of Hygiene at Warsaw, which was established recently by the Rockefeller Foundation. After a competitive examination under the auspices of the Polish ministry of health, Prof. Selskar Gunn, representing the Rockefeller interests, made the final selection. An endowment fund of $250,000 was given by the Rockefeller Foundation to establish this institute.

The German Law on Methyl Alcohol.—The newly enacted law on the brandy monopoly in Germany forbids the use of methyl alcohol not only in food and beverages but also in perfumes and articles for cleansing, caring for or dyeing the skin, hair, nails or mouth. This prohibition includes wood spirit. The previous exemption from tax of alcohol and ether designed for hospital and other medical purposes has been rescinded. This action is exciting much unfavorable comment. Certain medical organizations have already protested to the government.

Maternity and Unemployment.—Both Spanish Houses of Parliament have approved the ratification of the Maternity and Unemployment conventions adopted by the first International Labor Conference held in Washington in 1919. The Maternity Convention states that a woman shall not be permitted to work six weeks before and six weeks after childbirth, and shall, during that period, be paid benefits sufficient for the healthy maintenance of herself and her child. In addition to this, she is entitled to free attendance by a physician or a certified midwife.

Course for Physicians in Physical Training.—Our German exchanges mention that this week there is being held at Berlin a graduate course on the importance of physical exercise. It was organized by the committee in charge of medical graduate courses and the German Hochschule für Leibesübungen, and is in charge of Prof. A. Bier. The aim is to give physicians a better insight into the nature and system of gymnastic exercises and sports. As these can be learned best by actual experience, the course includes three hour exercises, daily, besides three or four hours of lectures. The course is to last thirteen days and the expense for the whole with board and lodging is stated to be 955 marks.

Medical Work in Siam.—Dr. George McFarland, emissary to the United States from the king of Siam, has been on a short visit to his relatives in this country and will return to Siam in October. Dr. George McFarland, who is a graduate of the College of Physicians and Surgeons, Baltimore, is dean of the Royal Medical College, Bangkok (University of Chulalongkoran). A five-year course in medicine is given, with a sixth year in internship and practical experience at the college, which at present has 250 students. Dr. McFarland states that a flying service is attached to the medical department of the university in Bangkok, which is named after the late king, who donated the land and endowment fund. Dr. McFarland is not a missionary to Siam but a representative of the Siamese government.

University News.—Sir George Murray recently opened the new Darling Building at the Medical School of the University of Adelaide, Australia. This building will serve the department of the fundamental sciences of the medical school, as formerly there was insufficient accommodation for the teaching of anatomy, physiology and pathology. The family of the late John Darling contributed £15,000 toward the erection of the building. In declaring the building open, Sir George gave an account of the development of the medical school from the creation of a lectureship in physiology in 1882 to the establishment of a chair of anatomy in 1884; through the period when medical students received the complete course of training, up to the present extension of the school. The library of the Darling Building will accommodate the library of the South Australian branch of the British Medical Association, as well as the medical library of the university.

Three Years of the Swedish Antivenereal Disease Legislation.—The *Hygienisk Revy* devotes a long editorial to the workings of the law which has now been in force for three years. The number of cases of venereal disease has been reduced by 60 per cent. during this period in Stockholm, and by 40 per cent. for the whole of Sweden. Dr. Karl Marcus in announcing these figures remarked that the legislation is not altogether to be credited with this improvement, as the hard times have something to do with it. During periods of prosperity, the venereal diseases increase in frequency, and they drop off during financial depression. However, during this three year period, the reduction in the number of cases of venereal disease at Copenhagen and at Christiania has been only 10 per cent. The editorial adds that both Norway and Finland are planning similar legislation, and even in Germany, parts of the Swedish law have been taken as a model. This law was discussed with great interest at the Red Cross Conference at Copenhagen in May. The objection is made to the law that it does not suppress prostitution, but the editorial reiterates that this is a social, not a medical question, and the law is planned from the medical standpoint. Venereal disease in sailors is a question which demands international cooperation, the editorial adds. In Sweden the seamen get free medical attention but this is not the case everywhere.

Graduate Courses in Western Europe.—Nearly all the European countries are busily organizing graduate courses in all kinds of specialties, in hygiene, general medicine, diagnosis, etc., and they all welcome American physicians with special cordiality. It is impossible to call attention to all the courses separately, and the American University Union has been founded partly to supply information in regard to graduate and undergraduate work for all applicants. The office in England is 50 Russell Square, London, and Prof. J. W. Cunliffe of Columbia University, New York, is the secretary of the board of trustees in the United States. The office of the continental division is at 1 rue de Fleurus, Paris. There is also a university bureau of information for medical affairs at Paris which is open every afternoon with an English speaking official in charge, 65 rue de Miromesnil, Paris. A practical guide has been published containing the data useful for medical men, and information as to special graduate courses at any time is freely available on demand. Italy also is offering numerous courses, and Germany has a regular well established system for graduate courses which brings them within the reach of every practitioner in the country at some time during the year. The Vienna graduate courses have been mentioned recently in the correspondence department. Prof. F. Widal begins September 4, at Paris, two courses of ten lectures each on methods of clinical exploration applied in the diagnosis of diseases, especially of the kidneys and liver. Each course is limited to twenty-five, and the price for ten lectures is 100 francs.

Personal.—Dr. N. Bishop Harman, London, has been elected a corresponding member of the Société nationale des sciences naturelles et mathématique de Cherbourg, in recognition of his researches into the origin of the facial musculature.——Prof. George H. F. Nuttall of the University of Cambridge, England, has been elected a corresponding member of the Société de Biologie, Paris, and of the Society of American Bacteriologists.——Dr. Alexander Mills Kennedy, who was appointed professor of medicine in the Welsh National Medical School last October, has been elected dean of the school to succeed Prof. David Hepburn.——Sir William Thorburn, Sir Charles A. Ballance and Dr. R. P. Rowlands have been elected fellows of the Royal College of Surgeons of England.——Dr. Legry, professor of anatomy in the Paris School of Medicine, has been elected a member of the Académie de Médecine at Paris, to succeed the late Professor Ranvier.——Prof. L. Devoto has been placed in charge of the Italian Antonio Devoto Foundation which has a 10,000,000 liras fund to train the public in hygiene and prophylaxis of occupational affections. An asylum for children and a colony for study and work are also planned and a large property has been acquired at Chiavari for the purpose. Some scholarships for college work and graduate study are also to be offered to Argentine undergraduates and graduates.——The seventieth birthday of Dr. S. Goldflam, one of the leading neurologists and alienists of Poland, was celebrated by the profession there recently. The *Informateur* states that a special volume of "Neurologie polonaise" was dedicated to him on this occasion.

Deaths in Other Countries

Dr. **W. H. Banner Robinson,** surgeon-general with the government, of Bengal, India.—Dr. **K. McMillan,** of typhus fever, while attending his patients, at Hamkeung, Korea.——Major-Gen. **W. F. Stevenson,** R.A.M.C., England, formerly professor of clinical and military surgery at the Royal Army Medical School; author of "Wounds in War, the Mechanism of Their Production and Their Treatment"; July 7, aged 78.——Dr. **A. N. Davis,** superintendent of the Devon Memorial Hospital, England, June 29, the day preceding his intended retirement.——Dr. **Deiters,** director of the Psychiatric Institution at Düren, aged 54.——Dr. **S. S. Ostenfeld,** assistant to the orthopedic clinic at Copenhagen.——The *Policlinico* reports the death of Dr. **C. Cavazzeni** and Dr. **Ricci** of Bergamo, both killed in an automobile accident.——Dr. **J. Drivon** of Lyons, aged 80.

Government Services

Changes in Public Health Service Appointments

Changes in the heads of the various divisions of the U. S. Public Health Service have been announced by Surgeon-General Cumming. Surgeon F. C. Smith has been detailed as Assistant Surgeon-General in charge of the division of marine hospitals and relief, and Surgeon B. J. Lloyd has been detailed as Assistant Surgeon-General in charge of the division of sanitary reports and statistics of the bureau. Assistant Surgeon-General C. H. Lavinder has been relieved as Assistant Surgeon-General in charge of the division of marine hospitals and relief, and has been assigned to the position of executive assistant in the office of the Surgeon-General. Assistant Surgeon-General B. S. Warren has been relieved from duty as Assistant Surgeon-General in the bureau and assigned as director of the second regional district, at Baltimore.

New Medical Reserve Units

In accordance with the scheme of organization of medical reserve units, the following new hospitals have been organized:

Evacuation Hospital No. 21 (St. Anthony's Hospital, Terre Haute, Ind.).

General Hospital No. 55 (Creighton University College of Medicine, Omaha, Neb.).

Red Cross Loans for Blinded Ex-Service Men

At the meeting of the executive committee of the American Red Cross in June, the sum of $12,000 was made available for making capital loans to blinded ex-service men during the fiscal year ending June 30, 1923. These loans are for the totally or partially blinded soldiers who wish to establish themselves in a small business. The loans will be subject to the following conditions:

1. No loans shall be made unless the man's progress has been satisfactory to the officer of the U. S. Veteran's Bureau who has had immediate supervision of his training.

2. No loans shall be made until a thorough investigation of the business venture has been made by a responsible agent of the bureau who is familiar with the nature of the business which the man desires to establish.

3. No loans shall be made without the approval of both the director of the Evergreen School for the Blind and the fiscal agent of the American Red Cross, if the man has received his training at Evergreen, or without the approval of the supervisor for the blind and the fiscal

agent of the American Red Cross stationed at Evergreen, if the man has received his training elsewhere.

4. It is the understanding that in every case in which a trainee has been aided to establish himself in a small business venture with the aid of a loan he will be given adequate supervision and follow-up, and that for the first year he will be visited by an agent of the bureau familiar with the training of the blind and with the nature of the business, at least once in three months.

Foreign Letters

PARIS

(From Our Regular Correspondent)

July 21, 1922.

Spread of Cocain Traffic

About a year ago, Dr. Courtois-Suffit, a medicolegal expert, presented, in collaboration with Dr. René Giroux, a communication to the Academy of Medicine on the inadequacy of the law of July 12, 1916, in connection with the campaign against cocainomania (THE JOURNAL, Aug. 20, 1921, p. 633). In the meantime, Suffit and Giroux have pursued still further interesting investigations on the traffic in cocain. The number of arrests on the charge of trafficking in cocain has increased four-fold, from fifty-three in 1916 to 212 in 1921.

In order to escape the vigilance of the police, traffickers in cocain have, of late, invented a number of schemes, some of them quite ingenious. They sell the drug in counterfeit wrist-watches, medallions, or powder boxes with a double bottom. Some go about as truckers, selling tangerines containing a supply of cocain; others offer for sale artificial flowers which have within their petals a tiny pouch enclosing 2 or 3 gm. of the drug. Some persons engaged in the traffic do not carry with them a supply of the drug but seek out customers, while they are trailed by a partner who distributes the drug. Sometimes, too, the cocain is offered for sale, payment is made in advance, and the place where the drug is concealed is made known. It may be behind a drinking fountain, under the sidewalk or under the seat of a parked taxicab. Employees on through express trains and soldiers with the occupation troops in the Rhine Province are said to be guilty of taking part in the traffic. The drug is transported by aeroplane as well as by mail, coming, in this case, chiefly from Morocco, Spain and Holland. To facilitate distribution, important depositories have been created throughout the provinces. A firm of exporters and commission brokers, who were supposed to be dealing in textiles, was in reality engaged in wholesaling German cocain. The enormous profits realized constitute a very serious temptation. The present purchase price of a kilogram of cocain is about 1,300 francs ($106.60). A small package of cocain, containing 1 gm., is usually sold for from 20 to 30 francs. Thus, the traffickers and middle men have about 20,000 francs ($1,640) to divide between them, for every kilogram of the drug they sell.

Drs. Briand and Livet recently pointed out that certain occupations and employments have a tendency to increase the number of cocain addicts. For instance, among motion picture artists, the use of cocain is widespread, owing to the fact that the drug is said to make the eyes more brilliant and more photogenic. In order to combat this illicit traffic more successfully, a law supplementing the act of July 12, 1916, has just been passed. According to the terms of this new law, the courts shall impose a prison sentence of not less than five years nor more than ten years on persons found guilty of having contributed to the delinquency of others by facilitating in any manner the use of narcotic drugs. But, in order that the campaign against cocainomania may be effective, it is desirable that some form of international understanding on the subject should be reached. The spread of the cocain habit in foreign countries, as well, makes it seem likely that it would be possible to bring about the creation of an international commission on narcotics, the most important duty of which would be to draft an international law covering the subject and to provide for its rigorous enforcement. Dr. Briand and Livet have appealed to the Société de médecine légale that it draw up such a resolution.

In view of the fact that the council of the League of Nations has established a consultative commission on opium, it is to be hoped that the labors of this commission will result in the formulation of a uniform plan by which the trade in narcotics can be controlled adequately.

The Therapy of Hypophysial Syndromes

The third Réunion neurologique internationale annuelle, recently held in Paris, under the auspices of the Société de neurologie, devoted the whole session to the discussion of the therapy of hypophysial syndromes. Drs. Jean Camus and G. Roussy, both of Paris, presented a report on the pathologic anatomy and the pathologic physiology of such syndromes. Dr. J. Froment of Lyons discussed the clinical and the therapeutic aspects of these syndromes. Dr. Velter of Paris described the visual affections associated with hypophysial tumors; Dr. Harvey Cushing of Boston, the surgical treatment of tumors of the pituitary body, and Dr. Béclère of Paris, the roentgenotherapy of the hypophysis.

Béclère collected forty cases of hypophysial tumors treated by roentgenotherapy. The results were excellent from every point of view. Béclère regards roentgenotherapy as the preferable treatment of tumors of the pituitary body (especially in acromegaly and giantism), with the exception of tumors of syphilitic origin and syndromes characterized by glandular deficiency.

In regard to organotherapy, Dr. Froment expressed himself in a reserved manner. He recalled that we are not entitled to consider extracts of the pituitary body as the equivalent of products secreted by the hypophysis. Some of the effects secured by the injection of such extracts may be due to the presence of quite ordinary substances. There is, however, one syndrome on which injections of an extract of the posterior lobe exert a marked effect; namely, diabetes insipidus; but the action seems to be palliative rather than curative. Some encouraging results have been obtained in infantilism and in the adiposogenital syndrome. While Froment would not wish to reject organotherapy absolutely, he emphasizes that the application of the method should be in a very critical spirit.

Preventive Serotherapy in Tetanus in Civil Practice

In a recent number of the *Gazette des hôpitaux*, Dr. Lop of Marseilles raises the question whether preventive serotherapy in tetanus is indispensable in civil practice. He refers to a communication presented, during the war, by Dr. Souligoux to the Société de chirurgie, in which he stated that, while he was not opposed to preventive injections of antitetanic serum, he did not think that the disappearance of the tetanus was due solely to these injections; the principal factor is the asepsis and the antisepsis, which are applied with more active and more effective substances than at the beginning of the war. Of from 1,000 to 1,200 persons injured annually on the streets, wharves or boats or in factories, Dr. Lop has had, during a long period of years, only one case of tetanus, which he encountered in a fully developed state the fourth day after the accident. The wound was a bruise of the hand. The tetanus was treated and cured by the Baccelli method. Lop does not use, at the present time, the preventive injections of antitetanic serum, nor has he done so since 1906, in which year he observed two fatal cases of tetanus in patients who had received preventive

injections of antitetanic serum that had come directly from the Pasteur Institute. Among the 15,000 injured persons that he has treated since that time, there were some who presented serious bruises and lacerations. Nearly all the wounds were contaminated with grease and dirt. A number of the patients were injured at sea, some on boats transporting horses, and often received no medical attention for from four to eight days after injury.

No doubt, the war wounded presented a higher degree of susceptibility, as a result of the fatigue and privations suffered during the hours preceding or following the battle; and in consequence, also, of the delay, often prolonged, in receiving first aid, which was not always adequate in the first-aid outposts. Lop is ready to admit that, if he had been at the front, inadequately equipped, he would not have hesitated to resort to preventive injections of antitetanic serum—if for no other reason, to satisfy his conscience, and out of respect for the results obtained and proclaimed by surgeons whose scientific authority is only equaled by their probity. But, farther to the rear, in an evacuation hospital in which approximately the same conditions obtained as in civil practice, he would not have departed from the technic that he ordinarily employs: lavage; cleansing with soap; disinfection with alcohol or ether, tincture of iodin and hydrogen peroxid; extensive débridement; prudent sequestrotomy; continuous irrigation with surgical solution of chlorinated soda or with iodin-iodid solution.

Death of Dr. Jacques Bertillon

Dr. Jacques Bertillon, director of the army bureau for medical and surgical statistics, died recently, at the age of 70, after a long illness. Convinced that the end was near, he wrote a short account of his life and sent it to certain journals. He was the son, grandson and brother of well-known statisticians, and devoted his whole life work to statistics. For a period of thirty years—from 1883 to 1913—he was chief statistician for the city of Paris. For more than ten years, he was an instructor in the science of statistics in the Collège libre des sciences sociales, which he had helped to found in 1895. He published a large number of articles in special journals; more particularly, in the *Journal de la société de statistique* (of which society he was president) and in the *Annuaire statistique de la ville de Paris*. He assisted in founding the national alliance for the augmentation of the population of France, and, with a view to supporting national propaganda for the betterment of the birth rate, he founded the review *La femme et l'enfant*. He was a member of the Conseil supérieur de statistique and also of the Conseil supérieur de la natalité.

Dr. Gran's Account of Famine Conditions in Russia

Dr. M. M. Gran of Petrograd, speaking at the Pasteur Institute of Paris recently, gave a vivid account of famine conditions in Russia. Dr. Gran has been sent out by the Pan-Russian Medical Union to make known to the medical profession in Europe and the United States the gravity of the sanitary situation created by the famine, which presents certain serious dangers for the countries of western Europe. According to Dr. Gran, the number of persons suffering from the famine amounts to 35 million of the population, while the number of persons being aided by foreign governments and charitable organizations (for the most part, American) is only from five to six millions.

In connection with this address, the Russian physicians in Paris deposited a magnificent wreath of flowers on the grave of Pasteur, and Dr. Roux, director of the Pasteur Institute, spoke of the close relations that had always united Russia's scientists with the Pasteur Institute, to the work of which Metchnikoff had made such important contributions.

BELGIUM

(From Our Regular Correspondent)

Liége, July 24, 1922.

Anergic Syphilis

Before the Société des sciences médicales de Bruxelles, Dr. Dujardin discussed recently the question as to whether it is possible to bring about the appearance of allergy in tardy, anergic (inactive) syphilis. He explained also the indirect procedure by which he had attempted to solve the problem. Allergy in syphilis is not effected solely by prepared extracts of spirochetes; it can be brought about by certain ordinary substances; for example, the frank intradermal reaction to milk in tertiary syphilis. It may be noted in passing that allergy in tuberculosis as well may be produced in the same manner. Allergy appears thus to be a quite simple reaction of any organism, for a long time infected, toward certain organic substances that in some respects are similar to the original toxic cause of the infection. By successive cutaneous injections of milk, we can secure marked cuti-reactions to milk in a given subject; that is, he develops an allergy for milk. The question arises as to whether or not this allergy for milk will produce a specific allergy in an anergic syphilitic. While Dujardin cannot as yet assert that such is the case, he has noted at least a curious result; namely, that injections of milk may exert a frank influence on secondary symptoms, and it seemed to him that they effected some improvement in tabetic patients, not only with respect to their general condition but also as regards certain subjective symptoms (darting pains). He thinks that this result is sufficient to justify further research; especially in view of the fact that chemotherapeutics seems thus far to have been unable to produce a cure for tardy anergic syphilis (general paresis, etc.).

Celebration of the Centenary of the Société royale des sciences médicales et naturelles

The Société royale des sciences médicales et naturelles, the venerable yet perennially young scientific society of Brussels, which is a direct lineal ancestor of our Academy of Medicine, in that the latter derived its founders from the former, celebrated, June 22, with special ceremonies held in Marble Hall, the centenary of its foundation. Professor Heger gave a vivid and trustworthy account of the founding and early activities of the society, bringing out the fact that it took up and continued the work of the old Société de médecine, de chirurgie et de pharmacie, which was established in 1795, following the fall of the Austrian régime. After an existence of a hundred years, the society was still giving abundant evidence of its vitality. "Men succeed each other," he said, "historical events pass across the stage and fall into oblivion; but institutions which are the outgrowth of high thoughts and lofty principles persist and must persist if their purpose is noble and upright, not contaminated by selfish interests and promoting only the good of the general public."

The Goiter Problem in Belgium

The results of Dandois' inquiry into the incidence of goiter in Belgium, which he recently laid before the Royal Academy, have a suggestive interest. His report shows that there are very few cases of goiter in Belgium, and it is interesting to study in a nongoitrous country the geographic incidence of the disease. It appears that the results are not identical with those obtained in countries in which the disease is widespread.

Dandois divides the country into three regions, basing the distinction on the relative number of cases of goiter found in each as shown by the examination of recruits. Lower Belgium, made up almost entirely of plains, presents an insignificantly low incidence of goiter. Middle Belgium, for the most part a country of plains, but which has, scattered

here and there, small areas of rocks and wooded hills, shows an appreciably higher incidence than Lower Belgium; but the number of cases is still comparatively small. The third area, the provinces of Liége, Luxembourg and Namur, where the earth's surface is uneven, rocky and cut up with mountains and valleys, with winding rivers, furnishes, with a total population of not much more than a million, relatively high figures, there having been 108, twenty-six and seventeen exemptions, respectively, in the three provinces.

This inquiry is only the prelude of a statistical study, which will furnish valuable information, for the time is propitious in view of the fact that the project of distributing throughout the state a high grade of drinking water seems about to be realized, and the further fact that the economy of the distribution of goiter poison is being studied more and more and that, in all probability, drinking water will be found to be the principal intermediary agent.

Annual Meeting of the Belgium Surgical Society

The annual meeting of the Société belge de chirurgie was held this year at Liége, under the presidency of Professor Willems. A large number of surgeons of Brussels, Antwerp and Ghent gathered in the hospital services of Liége and listened to the discussions. There were three main subjects studied:

ARTICULAR TRAUMATISMS OUTSIDE OF FRACTURES

Albert of Liége set forth the surprising results secured by immediate active mobilization in traumatisms of the knee. It was first applied to the treatment of hemarthrosis. Willems' method has completely revolutionized old therapeutic methods and changed for the better the prognosis in a large proportion of articular lesions. The technic and the results are very simple. In simple traumatic hydrarthrosis, the treatment is the same and the results are also perfect. The essayist reported also the excellent success secured by meniscectomy in cases of contusion or of luxation of the semilunar cartilage, fifty cases of which have been treated by Willems.

The method has been applied also to purulent arthritis, formerly much feared. All forms of incision and all means of drainage that had been tried hitherto had failed miserably. Mobilization begun at the start, while the infection is still confined to the synovial membrane, by a continual *brassage*, rids the joint of its purulent contents. When the treatment is instituted in the very beginning, patients suffering from purulent arthritis in full evolution will preserve in the injured member a musculature scarcely inferior to that of the corresponding sound member.

AMPUTATIONS AS DETERMINED BY THE TYPE OF PROSTHESIS TO BE WORN

Martin and Neuman discussed the level of the amputation, the choice of technic and postoperative treatment. In leg amputations they prefer the Anten method, with lateral flaps. They discredit the classic amputations of Chopart, Pirogoff and Lisfranc. They assign great importance to providing patients with temporary prosthesis soon after the operation, and recommend early mobilization for amputation stumps. Some of their conclusions follow:

The development of orthopedics, as far as supplying prosthetic apparatus for patients is concerned, has had a notable influence on the surgical technic of amputations. It is clearly evident from the experience gathered during the war that a surgeon who is called on to perform operations should keep in close touch with an orthopedist who is acquainted with modern methods of treatment and with modern types of prosthesis. The complete recovery of this class of wounded demands the close collaboration of the surgeon and the orthopedist. It is desirable, for the sake of those who have had limbs amputated, that the large surgical services recognize the necessity of this collaboration. Our large sanitary units, both official and private, should have an orthopedic service attached to their formations; at least for the orthopedic treatment of stumps and the early provision of prosthetic apparatus. It would also be desirable for such formations to keep in constant touch with an institution capable of furnishing prosthetic apparatus constructed on definite, rational and scientific principles.

PSEUDO-APPENDICITIS

Voncken and Reynders brought out the importance of deep roentgen-ray examinations for the purpose of diagnosing pseudo-appendicitis, which may take on the various clinical aspects of chronic appendicitis. They draw especial attention to cases which, owing to the presence of a Jackson membrane or on account of pericolitis, mesenteritis or epiploitis require special surgical treatment.

LONDON

(From Our Regular Correspondent)

London, July 14, 1922.

Fifth International Birth Control Conference

The fifth international birth control conference, of which the program was given in a previous letter (THE JOURNAL, June 17, 1922, p. 1907), has been held. The attendance was not large, but the delegates included visitors from all parts of the world, as well as a number of health officers and other representatives of public bodies in this country. The president, Dr. G. V. Drysdale, said in his address that there had been an embargo on the entrance of science into the social sphere, and that their movement was the result of the attempt of the greatest thinkers of the past and present to obtain a really scientific sociology. They met for the first time with the knowledge that the whole world was ready for the doctrine of birth control, and that East and West were ready to meet on this fundamental human need. The terrible economic distress and unemployment which followed the war had forced statesmen to recognize the fundamental truth of the malthusian doctrine, while the great pronouncement by Lord Dawson, the king's physician, in favor of both a rational and humane sexual philosophy and birth control, had had an effect all over the world.

Today all organized opposition to birth control was dead, except that of the Roman Catholic church. The movement was as greatly concerned with the quality of the race as with its quantity, and the latter question was becoming of supreme importance in countries such as Great Britain, America and France, where the birth rate had now fallen to fairly manageable figures, but where family limitation had been adopted by the educated and successful sections, leaving the poor, improvident stocks to multiply without restraint in their ignorance, to the great injury of our race. The movement had always been deeply concerned with moral ideals, and had always had as one of its chief aims the promotion of sexual purity through general early marriage. One of the most important objects of the conference was to urge that the public authorities of all nations take steps to secure the provision of hygienic birth control instruction at all hospitals and medical centers where the poor and the diseased congregated. For the whole of Europe, the birth rate had fallen from 40 in 1876 to 36.5 in 1901, which meant 3,000,000 fewer annual births. Australia and America probably swelled the reduction to 5,000,000. This meant that at least 20,000,000 persons had adopted family limitation in one form or another in the forty-five years since the beginning of the movement. The reduction of births had saved at least the same number of lives. If the process was continued until the average birth rate of the entire world was reduced to 17 or 18 per thousand, they would save lives at the rate of 25,000,000 each year,

remove untold suffering from millions of hapless men, women and children, make early marriage and social purity possible, eliminate the struggle for bare existence, improve the quality of the race and delay the economic rivalry which was the most potent cause of international friction and war.

Herr Ferch (Austria) said that in his country their opponents, who were supported by large sums of money, were mainly the war profiteers, who were dreaming of a war of revenge, through an excessive birth rate. Dr. Goldstein (Germany) deplored the fact that nothing of the conference would be published in the German papers.

A resolution was passed expressing pleasure at the achievements of the movement and its extension to the East and calling on the governments of all nations to facilitate extension of birth control knowledge among the poor and unfit, in the interests of human welfare, race improvement and lasting peace.

At the afternoon conference, Mrs. Margaret Sanger, president of the American Birth Control League, presided. Mr. Edward Cecil said that the root cause of the evil was too much motherhood. What chance was there under modern conditions, especially in towns, for the mother or the children when children were brought into the world at the rate of one a year?

Bernard Shaw on "The Advantages of Being Unregistered"

Mr. Bernard Shaw addressed a crowded meeting of the Abernethia Society of St. Thomas' Hospital on the heretical theme of "The Advantages of Being Unregistered," which he treated in his usual paradoxical vein. It was a serious blow, he said, to medical prestige that a knighthood had been conferred on Mr. Parker the "bone setter" (The Journal, July 1, 1922, p. 52). This title was usually given in medicine to the heads of the profession. Here it had been bestowed on a man who was not only unregistered but unqualified. He had no recognized medical training but "had learned his business" from another bone setter. The faculty was inclined to regard such persons as ignorant. Unfortunately, they got relatively as many cures as the qualified, and often obtained their best results when the latter had failed. To the public, there had always been a glamor about the unqualified man—probably because he dared to charge more than his qualified rival. His popularity had increased so much of late that patients would now frequently run the whole gamut of osteopaths, masseurs, Christian scientists and psychotherapists before turning to the qualified physician.

What was the cause of this waning faith? He attributed it to the narrow-mindedness of the general medical council. Its main failing was that it consisted entirely of physicians. Such a system tended to a medical autocracy, and the community for whom the physicians worked had no opportunity of expressing its views on medical organization and conduct. The remedy lay in constituting the council mainly of members of the informed public, with physicians as assessors. Such a body would be in a position to effect several needed reforms in medical practice and education. First was the question of admission to the profession. It was absurd for any body of men, whether physicians or bottle-washers, to say to a man, "You shall not enter our profession." That was for the general public to say. Next came the problem of medical education. The most needed reform was lengthening of the curriculum, but this could be compensated for by cutting out certain unnecessary parts of subjects which were taught at present. The smattering of science, for instance, in which the medical student was grounded, was unnecessary. Medicine was not a scientific profession. Yet such was the effect of the so-called scientific training that the surgeon tended to regard all disease problems as mechanical, the physician to regard them as chemical; whereas, such problems were vital. The curriculum should be lengthened by study of Swedish massage and osteopathy, both of which forms of treatment had proved of value.

The Medical History of the Great War

The second of the series of volumes of the medical history of the war has been published. It is the first of two volumes on diseases. The chapter on influenza is contributed by Dr. Herbert French and Sir Wilmot Herringham. Much attention is given to the conditions in which pneumonic symptoms developed. "Delirium and coma occurred in bad cases, but more striking was the number of cases in which they were entirely absent. Big, strong men, cyanotic, breathing thirty times to the minute, and obviously dying, would be fully conscious, not realizing their danger in the least until within a half-hour of death." In the chapter on cerebrospinal fever, of which there was a formidable epidemic, the importance of overcrowding in the causation is emphasized. In the chapter on trench fever, the failure of all forms of treatment, including arsphenamin, is pointed out. Prophylaxis—freeing the man from lice—is the important thing. The second volume will be concerned with gas warfare, and the medical aspects of aviation and mine warfare. It is expected that the whole series, excepting the two volumes on statistics and epidemiology, will be completed about the end of the year, with the exception of the general histories of the medical services in the various campaigns of the war.

The Army Medical War Collection

The valuable army medical war collection of specimens, which has been housed at the Royal College of Surgeons (as described in a previous letter to The Journal) has now been handed over to the college by the War Office, with a sum of $37,500, which is to be devoted in part to a new building for housing the collection, while the rest is to be invested with a view to providing an annual sum to help in the maintenance of the new section. An important feature of the arrangement is that, while the collection will form an integral part of the museum of the college, it will always be at the disposal of the army medical authorities for demonstrations to members of the corps.

Industry's Death Roll

The annual report of the chief inspector of factories and workshops for the year 1921 has just been issued. During the year, 92,565 accidents were reported, of which 951 were fatal, as compared with 138,773, of which 1,404 were fatal, in the previous year. The decline is almost entirely due to the phenomenal inactivity of industry throughout the year, including the prolonged coal strike which resulted in many large iron mills and blast furnaces being completely closed down for a long period. These industries are heavy accident producers. The number of accidents due to electricity was 322, thirty-two being fatal—a reduction of 20 per cent. in the total and of 50 per cent. in the fatal cases compared with each of the previous two years. There were 230 cases of lead poisoning, of which twenty-three were fatal. In 1900, the number was 1,058, of which thirty-eight were fatal. There were no cases of phosphorus or mercury poisoning, but one case of arsenic poisoning. The figures for anthrax were twenty-five cases, with six fatalities. This low figure is held to be partly due to the inauguration of the government station for the disinfection of wool at Liverpool. On the question of hours of work, it is stated that, since the forty-eight-hour week has been established, it is a source of satisfaction to find that, when the reduction of hours is continued over a considerable period, output tends in the majority of cases to attain the old level and that the beneficial effects of the increased leisure on the workers are becoming apparent.

Marriages

CECIL EDWARD REYNOLDS, Los Angeles, to Miss Nora Gardner of Hollywood, Calif., July 22.

WILLIAM KUYKENDALL to Miss May Rowland, both of Eugene, Ore., at Salem, July 19.

LOUIS FRANCISCO ROSS to Miss Margaret Grubbs Starr, both of Richmond, Ind., July 19.

DOUGLAS SQUIRE CORPRON, Yakima, Wash., to Miss Grace Chapman of Redwood Falls, Minn., July 12.

PHILIP L. NEWMEYER, Salem, Ore., to Miss Ruth Johns of Manila, P. I., at San Francisco, July 13.

CHARLES WILLIS MCLAIN, Gurdon, Ark., to Miss Joyce Dudley of Hope, Ark., June 24.

JAMES WESLEY ALDRIDGE to Miss Martha Coffing, both of Covington, Ind., June 15.

ABRAHAM GREENBERG, Omaha, to Miss Blooma Kogan of Minneapolis, June 14.

EARLE BLOODGOOD FOWLER to Miss Barbara Blatchford, both of Chicago, August 5.

JOSEPH POKORNY to Miss Carrie Wells, both of Baltimore, July 23.

Deaths

Harold **Barclay** ⊕ New York City; Columbia University College of Physicians and Surgeons, New York, 1899; member of the New York Academy of Medicine; consulting gastro-enterologist to the Portchester Hospital and to St. Mary's Hospital, Hoboken; assistant attending physician at Bellevue Hospital, New York; served two years in France during the World War with the M. C. U. S. Army; specialized in internal medicine; died suddenly, July 22, aged 46, at Biarritz, France.

William D. Wolverton ⊕ Pittsdown, N. J.; colonel U. S. Army, retired; was appointed assistant surgeon in the Army in 1861; served as chief surgeon, department of the Columbia, Vancouver Barracks, Wash., from 1894-1898; was post surgeon at Washington Barracks, D. C.; medical director of the department of the South at Hilton Head, S. C., in 1864; retired in 1898 with the rank of colonel; died, July 20, aged 88.

Edward **M. Eidheer,** Chicago; University of Vienna, Austria, 1886; formerly expert in the department of agriculture, bureau of chemistry, Austria; member of the Royal Academy of Science of Vienna and the Academy Physico-chemique Italienne; was awarded the gold medal for technical work and scientific merit of the Italian Academy of Palermo; died, July 24, aged 60, from cerebral hemorrhage.

John **E. Sylvester** ⊕ Wellston, Ohio; Medical College of Ohio, Cincinnati, 1876; Bellevue Hospital Medical College, New York, 1884; formerly president of the Ohio Valley Medical Society; for many years councillor of the Ohio State Medical Association; for twenty-five years owner and publisher of the Wellston *Telegram;* died, July 25, at the Holzer Hospital, Gallipolis, from diabetes, aged 67.

John **Nesbit Scott** ⊕ Peabody, Kansas; University Medical College of Kansas City, Mo., 1897; established the first radiographic laboratory in Kansas City; died, July 24, aged 51, as the result of burns received in experimenting with roentgen rays while in practice at Kansas City. Dr. Scott's right hand was amputated several years ago, necessitating his retirement from practice.

George **Shultze Youngling** ⊕ New York City; Bellevue Hospital Medical College, New York, 1890; consulting physician to the Manhattan State Hospital and to the Central Islip (L. I.) Hospital for the Insane; member of the American Medico-Psychological Association; died, July 25, aged 60, at his summer home in Patchogue, L. I., from uremia.

Robert **Francis Lawless,** Stamford, Conn.; Yale University School of Medicine, New Haven, Conn., 1907; member of the Connecticut State Medical Society; formerly surgeon for the Pennsylvania Railroad; aged 42, fell dead on the Grand Central Terminal steps, New York, July 27, following an overdose of chloral.

Charles P. Gerstmeyer, Terre Haute, Ind.; Medical College of Ohio, Cincinnati, 1867; formerly on the staff of St. Anthony's Hospital; at one time coroner, health officer and member of the school board of Terre Haute; died, July 27, aged 75, from pneumonia.

Samuel W. Hixon, Daisy, Tenn.; University of Tennessee College of Medicine, Memphis, 1890; member of the board of education; formerly a member of the state legislature; at one time county physician; died, July 19, aged 62, at a hospital in Chattanooga.

Lyman T. Strother, Nowata, Okla.; Rush Medical College, Chicago, 1867; Jefferson Medical College of Philadelphia, 1873; member of the Oklahoma State Medical Association; veteran of the Civil War; died, July 19, aged 82, following a long illness.

William Allin Archer, Houston, Texas; University of Virginia Department of Medicine, Charlottesville, 1869; member of the Medical Society of Virginia; Confederate veteran; died, July 6, aged 80, from senility, at the home of his daughter.

William Patrick O'Malley, St. Paul; University of Minnesota Medical School, Minneapolis, 1902; served during the World War in the M. C. S. U. Army; died, July 6, aged 48, from injuries received in an automobile accident, near Shakopee.

Francis Wade Hughes, New Bern, N. C.; University of Pennsylvania School of Medicine, Philadelphia, 1880; member of the Medical Society of the State of North Carolina; died, June 28, at the Union Protestant Hospital, Baltimore, aged 65.

Samuel N. Quillin, Washington, D. C.; Marion-Sims College of Medicine, St. Louis, 1899; former clerk of the house of the Indiana state legislature; died, May 19, aged 53, at the Sibley Memorial Hospital, from diabetes.

Hugh N. McDonald ⊕ Minneapolis; McGill University Faculty of Medicine, Montreal, Que., Canada, 1889; formerly professor of diseases of the chest at the Hamline Medical College, Minneapolis; died, July 15, aged 59.

Ernest Potter Storey, Minneapolis; Denver College of Medicine, Denver, 1901; died at the General Hospital, July 21, aged 43, as the result of pistol wounds, presumably self-inflicted, at his apartment, July 18.

Alpheus Henley, Melbourne, Fla.; Starling Medical College, Columbus, Ohio, 1865; veteran of the Civil War; served as government physician to the Cheyenne and Apache Indians in 1870; died, July 11, aged 88.

Archibald A. Campbell, Statesville, N. C.; University of Maryland School of Medicine, Baltimore, 1889; formerly county physician of Iredell County; died suddenly from heart disease, July 17, aged 66.

John Lawson Cameron, Philadelphia; Medico-Chirurgical College of Philadelphia, 1888; member of the Medical Society of the State of Pennsylvania; died suddenly, July 26, aged 67, at Ocean Grove, N. J.

Edna Ricker Field Kimball, San Francisco; Cooper Medical College, San Francisco, 1883; formerly attending physician to the Children's Hospital; died, July 26, aged 74, from hemorrhage of the bowel.

James Ray Brady, Sioux City, Iowa; State University of Iowa College of Medicine, Iowa City, 1893; consulting physician to the Samaritan and St. Joseph's Hospital, Sioux City; died, July 18, aged 54.

Robert H. Lillemann, St. Louis; Homeopathic Medical College of Missouri, St. Louis, 1904; member of the Missouri State Medical Association; died, July 17, at Barnes Hospital, St. Louis, aged 52.

William C. C. Freeman, Rock Springs, Wyo.; Trinity Medical College, Toronto, Ont., Canada, 1893; member of the Wyoming State Medical Society; died, July 21, aged 54, at Salt Lake City.

Susan Elizabeth Crocker, Los Angeles; Woman's Medical College of the City of New York, 1874; member of the Massachusetts Medical Society; formerly of Boston; died, July 18, aged 87.

Charles P. Evans, Lehigh, Iowa; Bennett Medical College, Chicago, 1891; died, June 6, aged 59, at the Mercy Hospital, Fort Dodge, Iowa, following an operation for perforated duodenal ulcer.

Enrique Alberto Rodes, Tampa, Fla.; Tulane University of Louisiana School of Medicine, New Orleans, 1918; died, July 11, aged 29, in Havana, Cuba, following a long illness.

⊕ Indicates "Fellow" of the American Medical Association.

Milton J. Hicks, Jacksonville, Fla.; Emory University School of Medicine (Atlanta Medical College), Atlanta, Ga., 1860; died, July 21, aged 84, at the home of his daughter in Atlanta.

Charles Noble Abbott, Chippewa Falls, Wis.; Northwestern University Medical School, Chicago, 1907; specialized in obstetrics; died, June 1, aged 52, at a sanatorium in Madison.

Frank Wilson Martin ✠ Lansing, Mich.; University of Michigan, Ann Arbor, 1886; specialized in ophthalmology, otology, laryngology and rhinology; died, July 17, aged 63.

Charles Douglas Miller ✠ Pottsville, Pa.; Jefferson Medical College of Philadelphia, 1884; member of the board of pension examiners; died, July 24, aged 61, from pernicious anemia.

Arthur Eugene White, Baggs, Wyo.; University of Minnesota College of Homeopathic Medicine and Surgery, Minneapolis, 1890; died, June 22, aged 54, from carcinoma.

John Taylor Stewart, Los Angeles; Jefferson Medical College of Philadelphia, 1878; member of the Medical Society of the State of California; died recently, aged 72.

Enos Hahn ✠ Leetonia, Ohio; Bellevue Hospital Medical College, New York, 1867; died, July 8, at Honolulu, Hawaii, aged 81, from cerebral hemorrhage.

Jesse C. Asbury, Greensboro, Ga.; Louisville Medical College, Louisville, Ky., 1886; member of the Medical Association of Georgia; died, July 3, aged 57.

Latzi Szabary ✠ New Orleans; Tulane University of Louisiana School of Medicine, New Orleans, 1877; died, July 23, aged 68, from heart disease.

R. M. Kimbrough, Rockwood, Tenn.; University of Tennessee College of Medicine, Memphis, 1888; veteran of the Civil War; died, July 23, aged 66.

Joseph H. B. Adams, Fort Recovery, Ohio; Physio-Medical Institute, Cincinnati, 1872; died, July 19, at the Otis Hospital, Celina, aged 74, from paresis.

Albert J. Herschman, Milwaukee; University of Vienna, Austria, 1887; died, July 31, aged 62, from an overdose of morphin, self-administered.

William D. Seeley, Taylorsville, Ky.; Louisville Medical College, Louisville, Ky., 1874; died, July 14, aged 72, from mitral regurgitation.

William D. Roussel ✠ Patterson, La.; Tulane University of Louisiana, New Orleans, 1889; died, July 19, aged 54, from heart disease.

Charles L. Heizman, Colonel, U. S. Army ✠ San Francisco; University of Pennsylvania, Philadelphia, 1867; retired; died recently, aged 76.

Lucian Tudor Platt, Terryville, Conn.; University of Pennsylvania, Philadelphia, 1869; died recently from lobar pneumonia, aged 76.

Oreon Staples Rhodes, East Stroudsburg, Pa.; University of Pennsylvania, Philadelphia, 1889; died, July 5, aged 59, from diabetes.

Samuel Milton Pratt, Topeka, Kan.; Homeopathic Medical College of Missouri, St. Louis, 1861; died, July 13, aged 86, from senility.

J. Louis Horsey, Fernandina, Fla.; Medical College of the State of South Carolina, Charleston, 1886; died, July 13, aged 65.

Willis H. Park ✠ Glenwood City, Wis.; College of Physicians and Surgeons, Keokuk, Iowa, 1884; died, June 27, aged 68.

Russell Withers, Annapolis Royal, N. S.; Medical Department of Columbia College, New York, 1865; died recently, aged 86.

R. L. Odilon Poliquin, Montreal, Quebec, Canada; Montreal School of Medicine and Surgery, 1895; died recently, aged 50.

Robert Amos Taylor, Spring Valley, N. Y.; Bellevue Hospital Medical College, New York, 1893; died, July 16, aged 56.

Allen N. Gray, Floyd, Texas; Baylor University College of Medicine, Dallas, Texas, 1901; died, June 15, aged 52.

H. W. Booth, Orion, Mich.; Western College of Homeopathic Medicine, Cleveland, 1868; died recently, aged 76.

Emil J. Schwandt, Chicago; Rush Medical College, Chicago, 1888; died, August 3, aged 59, from carcinoma.

William McChristie ✠ New York City; Long Island College Hospital, Brooklyn, 1895; died, July 20, aged 56.

John Leeson, Cadillac, Mich.; Detroit Medical College, 1869; died, July 21, aged 87, from senility.

The Propaganda for Reform

IN THIS DEPARTMENT APPEAR REPORTS OF THE JOURNAL'S BUREAU OF INVESTIGATION, OF THE COUNCIL ON PHARMACY AND CHEMISTRY AND OF THE ASSOCIATION LABORATORY, TOGETHER WITH OTHER GENERAL MATERIAL OF AN INFORMATIVE NATURE

THE OWENS ELECTRIC BELT

Another Fraud Barred from the Use of the United States Mails

A. P. Owens, a peripatetic quack, has been defrauding the public for some time by the sale of an "electric belt." Owens has advertised from New York City, Buffalo, Miami, Indianapolis, San Antonio and Chicago. As long ago as October, 1919, the city of Cleveland, Ohio, which does more, probably, than any other city in the United States to protect its citizens against medical fraud, called attention to the preposterous claims made by A. P. Owens for his belt.

On Jan. 14, 1922, A. P. Owens was called on by the federal authorities to show cause why a fraud order should not be issued against him and February 7 was set as the date for hearing the case. Owens failed to appear on that date; neither did he send an attorney, but he filed a written answer to the charges, together with the advertising literature being used by him at that time in the conduct of his business. The solicitor for the Post Office Department, Judge John H.

FREE
MEN Try my best Electric Belt with Special Sex Invigorator. FREE 60 DAYS. Knocks rheumatism, stomach, kidney, bladder, prostatic weakness, pain; greatest power; half price. Eye-opening facts free. A. P. Owens, Dept. 60, P. O. Box 861, Indianapolis, Ind.

A typical advertisement of A. P. Owens.

Edwards, in his memorandum to the Postmaster General, recommending the issuance of a fraud order against Owens, gives the facts regarding this quack, in part, as follows:

"Briefly outlined the scheme conducted by Owens, according to the evidence, consists in placing periodically, advertisements in various newspapers, many of them printed in foreign languages, in which he offers for sale through the mails a so-called electric belt, which, when worn as directed, is represented to be a cure for various diseases and ailments, many of them known to be incurable, while others are amenable to surgical interference only.

"After getting in touch with prospects through his advertisements he sends them literature containing gross misrepresentations as to the curative value of the belt, and offers terms of purchase which appear to be bona fide. After the belt is sold on these terms and the purchaser finds it is worthless or not as represented, and returns it, Owens refuses to abide by his guarantee to return the deposit 'Without Any Delay Or Question,' but alleges for one reason or another that the terms of the sale have been violated by the purchaser, and insists upon certain conditions being fulfilled, which are impossible of fulfillment."

A typical advertisement of Owens' is reproduced with this article. Through these advertisements Owens got in touch with his victims. Continuing to quote from the memorandum to the Postmaster General:

"When Owens receives an inquiry respecting his belt he forwards among other literature a stock letter in imitation typewriting setting forth among a number of other representations and promises his alleged 'FAIR AND SQUARE OFFER,' which is as follows:

"Order one of my powerful No. 15, UNIVERSAL MODEL BELTS, with OWENS' SUPREME POWER BATTERY, together with Special Attachment

(if needed), such as Head Bands and Arm or Leg Bands for treating Neuralgia, Headache, Rheumatism, Sciatica, etc. Send DEPOSIT covering my low catalog price, to prove that you are not sending out of mere curiosity. You will receive the Belt and whatever you may need with it, all wrapped in plain package, charges paid. You agree to begin immediately and wear the Belt continuously every day or night, as directed, for a period of TWO MONTHS from the time you take it from the Express or Post Office.

"At the end of 60 DAYS if you desire to keep the Belt, if you are convinced that it has done you more real good than all the drugs and doctors you know of, please recommend me to your sick friends. But IF, after giving the Belt a fair trial as above stated, for sixty days, you don't want to buy it, you agree not to keep it any longer, but to return it immediately postpaid to me, and if you will do this I will RETURN YOUR DEPOSIT in full, without delay or question, just as soon as I receive the belt back from the Post Office and the two months' trial COSTS YOU NOTHING, and as I take all the risk, please be honest with me—don't order unless you NEED THE BELT."

"It will be noted that Owens is very emphatic with respect to the matter of alleging that he will return the purchaser's deposit in full 'without delay or question.' The evidence shows, however, that purchasers are lucky indeed if they can secure a refund even after considerable bickering. It is shown that a purchaser residing in Philadelphia bought a belt from Owens February 11, 1920, under Owens' guarantee that if not satisfied after 60 days use he could return it and his money would be refunded. On April 9, 1920, the 59th day, the belt was returned as unsatisfactory. Owens received the belt on the 60th day. The refund was refused because Owens alleged the purchaser had not worn it exactly sixty days. On a card mailed to this purchaser on May 8, 1920, Owens states: 'If you can prove to me by a statement from your post office where you mailed the belt that same was mailed not earlier than April 10th, I will return $12.00 to you.' The belt was not registered, therefore such proof could not be secured, and no one knew this better than Owens. The foregoing is simply an illustration of Owens' methods of evading refunds. It indicates his lack of good faith, is directly contrary to his promise to refund 'without delay or question' and is a part of the general scheme to defraud."

With the letter quoted above Owens also sent certain pamphlets and circulars containing unwarranted and fraudulent claims for the electric belts. He also used the orthodox "scare methods" of the medical mail-order faker. Solicitor Edwards, in his memorandum, directs attention to this phase of Owens' quackery in these words:

"In one of his printed pamphlets Owens has recourse to a method frequently employed by mail order medical concerns, namely to scare the readers of his literature into purchasing his belt through dire forebodings of what will happen if prompt action on their part is not taken. After warning the reader of the dangers of delay Owens concludes:

"But for Pity's Sake DON'T DELAY. The hospitals and graveyards are full of people who waited for tomorrow to take the treatment they needed today. This is no joke, remember, but A SOLEMN WARNING. Send NOW before it is TOO LATE."

Of Owens' tendency to stay in one place only a short time the memorandum says:

"Attention is called to the several addresses used by Owens in the conduct of the business. At the time of the beginning of the investigation of his business Owens in his advertisements gave Woodcliff Lake, N. J. as his address. Investigation at this point disclosed that he had removed to New York. When the investigation was undertaken there it was found that a forwarding order was on file showing he had located at San Antonio, Texas, and at the same time it was learned that he was doing business at an address in Chicago. Investigation begun in Chicago in October, 1920, disclosed that Owens had been receiving mail there for about six months at the rate of about 30 letters a day. He also was operating under the name of Owens Publishing Company in the sale of alleged obscene pictures, and a case has been returned against him relative to that business. He was receiving about 20 letters a day addressed to that concern. Some time prior to March, 1921, Owens had evidently removed to Miami, Florida, as in response to a written communication addressed to him at Chicago by the inspector investigating the case Owens, writing from Miami, Florida, stated: 'My headquarters is here until May 1st; when I expect to leave for Washington, D. C., remaining there a short time, then I shall be on the move again; it is doubtful if I return to Chicago for some little time. . . .' Owens' plan of flitting from place to place can leave no other conclusion but that this method of evading responsibility also constitutes part of the general scheme to defraud."

In summing up the government's case against Owens, Solicitor Edwards in his memorandum to the Postmaster General says:

"Without reference to the question of the efficacy of electricity in the treatment of disease the evidence in this case shows, and I so find, that the claims and representations by this promoter for his appliance go far beyond the claims of those members of the medical profession who now recognize electricity as being efficacious in the treatment of some conditions. The evidence shows that electro-therapists do not employ electric belts in the treatment of disease.

"The evidence in this case further shows, and I so find, that the refund guarantee and so-called 'free sixty days' trial offer employed by Owens to induce persons to purchase his appliance are not made in good faith, but are designed to work a fraud on the public. . . .

"I find that this is a scheme for obtaining money through the mails by means of false and fraudulent pretenses, representations and promises, and I therefore recommend that a fraud order be issued against A. P. Owens."

The fraud order was issued against A. P. Owens by the Postmaster General, July 18, 1922.

Correspondence

SUGGESTION OF SPIROCHAETA NEOTROPICALIS AS NAME FOR SPIROCHETE OF RELAPSING FEVER FOUND IN PANAMA

To the Editor:—Work recently done has proved that the spirochete of relapsing fever in Panama is transmitted by the human tick *Ornithodoros talaje*, and that this spirochete is of a distinct species, variety or strain from the commonly recognized relapsing fever spirochetes, *S. obermeieri, S. novyi, S. kochi, S. duttoni* and *S. carteri.* Thus far we have called the organism referred to above the spirochete of Panama, but now feel that the time has come to give it a specific name. *S. novyi* is generally recognized as the relapsing fever spirochete of North America. Agglutination and immunologic tests demonstrate that the spirochete found in Panama differs as markedly from *S. novyi* as *S. novyi* does from the Old World strains.

The surface of the earth is divided by zoologists into six regions, namely, the Palearctic, the Oriental, the Australasian, the Ethiopian, the Nearctic and the Neotropical regions. The boundaries of these regions have been determined in a general way by the localization of genera and species of various forms of animal life. It does not seem at all improbable that each of these regions has its own particular species of the relapsing fever spirochete.

The Palearctic region, which includes all of Europe and the northern part of Asia, has *S. obermeieri.* The Oriental region, which includes India, Siam, the whole of the Malay Peninsula, part of China, Formosa, part of Japan and the Philippine Islands, has *S. carteri* (India). The Australasian region, which includes New Guinea, Australia and the Polynesian Islands, thus far has no described species. The Ethiopian region, which includes all of Africa south of the Great Desert and southern Arabia, has *S. duttoni.* There is also a spirochete credited to East Africa; but Castellani and Chalmers state that recent researches seem to identify it with the West African type. There is another spirochete, *S. berbera,* credited to the northern part of Africa, and to Algeria, Tunis, Tripoli and Egypt. This territory falls within the Palearctic or European region, and Castellani and Chalmers state that immunologic experiments show that this fever is closely related to the European type. The Nearctic region, which includes all of North America north of the Mexican line, except for the southern portion of Florida,

has *S. novyi*. The Neotropical region, which includes all of Central America and all of South America, has the spirochete of Panama, which we have referred to above. Relapsing fever is not uncommon in Colombia and Venezuela, and it is quite possible that the relapsing fever spirochete found in these countries is identical with the one found in Panama.

We propose the name *Spirochaeta neotropicalis* for the organism which we have referred to as the spirochete of Panama, because it is found in the Neotropical region and because we believe it to be a distinct species. The term spirochete, to paraphrase the words of Fantham, Stephens and Theobald, is used in this connection without prejudice as to the organism's ultimate correct generic name.

Lewis B. Bates, M.D.,
J. Harold St. John, M.D.,
Ancon, Canal Zone.

EXCISION OF BENIGN PIGMENTED MOLES

To the Editor:—Benign pigmented moles, as a rule, can be removed with the knife. The pigmented area should be given a margin of at least one-half inch or more, and the wound can be closed. One should divide the skin and remove some of the fat. If the margin of the pigmented area is indefinite, a wider margin should be given. Even if one cannot close the wound, one should never give a narrow margin. The only danger of excising a benign mole is to leave a piece of the tumor behind.

If the mole is situated in a position where it is difficult to give a good margin, for example, near the ala of the nose or the eyelid, the cautery should be used. The cautery must be hot enough to cut through the skin readily. When I think that the mole has become malignant, I always use the electric cautery instead of the knife, give a very wide margin of skin, and remove the subcutaneous fat and fascia.

We have on record at least 300 benign moles without a recurrence or death from metastasis. They were all completely excised with the knife or the cautery. During the same period of thirty years we have operated on at least 200 malignant moles with only one five-year cure.

In removing a mole, therefore, the skin and fat should be cut through, and should be given a good margin of healthy skin. As a rule, the excision can be done with the knife under procain, and the skin closed by any of the usual procedures. All elevated pigmented moles should be removed.

Joseph C. Bloodgood, M.D., Baltimore.

Queries and Minor Notes

Anonymous Communications and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

PENETRATION OF ROENTGEN RAYS

To the Editor:—Your answer to my inquiry about the penetration of the roentgen rays (The Journal, June 24, p. 1982) is still not clear to me. 1. I am surprised that you state that the square of the distance has no reference to penetration. If not, what is the law for penetration? 2. The alpha, beta and gamma rays had use as names for the rays of the roentgen rays perhaps before we had radium, if I remember correctly, so why are they applied only to radium? Why not compare the gamma ray from the roentgen ray to the so-called gamma ray of radium? 3. Further, I am still more confused when you tell me that intensity refers to amount, and penetration to quality.

Paul Peniston, M.D., Newnan, Ga.

Answer.—1. The law of penetration is that any beam or any part of a beam of the roentgen ray is absorbed, in any given substance, in proportion to the cube of its wave length. It is, of course, absorbed at different rates in different substances, the rate of absorption being as the cube of the atomic number of the absorber. There is a regular formula for this absorption rate which is given in an article by Dr. A. W. Hull (*Journal of Radiology* **1:27 [Jan.] 1920**). The distance has nothing to do with the rate of absorption, or penetration, of the roentgen ray.

2. The terms alpha, beta and gamma are not usually applied to rays issuing from a roentgen-ray tube. These three names are used to indicate radiations from radium, which is composed of three distinct kinds of rays. The alpha ray is the emission of a gas; the beta ray is a stream of electrons such as passes from the cathode to an anode of a roentgen-ray tube; gamma rays are electromagnetic waves. Only the electromagnetic waves come out of a roentgen-ray tube. The gamma ray from radium is exactly the same thing, except that the shortest wave coming from the ordinary roentgen-ray tube is in the neighborhood of one tenth of an Engstrom unit in length, while most of the gamma radiation from radium is of much shorter wave length than this. It has been estimated that in order to get from a roentgen-ray tube wave lengths as short as the shortest wave length from radium, it would be necessary to operate a tube at 1,000,000 volts.

3. With the roentgen ray, just as with a beam of white light, the beam includes many different qualities of radiation. A beam of white light may be divided into seven primary colors with all kinds of intermediate shades. This is because different wave lengths produce different color sensations in our organs of vision. A beam of roentgen ray will be composed of many different wave lengths or qualities of radiation. While these waves produce no sensation of color and do not affect our vision, the different wave lengths, or qualities, are just as distinct in their properties as are different wave lengths in a beam of white light. Two things must always be taken into consideration as applied to a beam of roentgen ray: intensity and quality; intensity refers to the amount of radiation, and quality means the same thing as penetration.

Medical Education, Registration and Hospital Service

COMING EXAMINATIONS

Alaska: Juneau, Sept. 5. Sec., Dr. Harry C. DeVighne, Juneau.

Massachusetts: Boston, Sept. 12-14. Sec., Dr. Samuel H. Calderwood, State House, Boston.

New Hampshire: Concord, Sept. 7-8. Sec., Dr. Charles Duncan, Concord.

New York: Albany, Buffalo, New York and Syracuse, Sept. 25-28. Ass't, Professional Examinations, Mr. Herbert J. Hamilton, State Education, Albany.

Iowa March Examination

Dr. Rodney P. Fagen, secretary, Iowa State Board of Medical Examiners, reports the written examination held at Des Moines, March 21-23, 1922, and also reports that one candidate was licensed by reciprocity, and one by endorsement of credentials at the meeting held April 12, 1922. The examination covered 8 subjects and included 100 questions. An average of 75 per cent. was required to pass. Two candidates were examined, both of whom passed. The following colleges were represented:

College	Passed	Year Grad.	Per Cent.
Harvard University		(1918)	87.6
University of Berlin		(1920)*	85.6

College	Licensed by Reciprocity	Year Grad.	Reciprocity with
Ohio State University	College of Medicine	(1919)	Ohio

College	Endorsement of Credentials	Year Grad.	Endorsement with
Northwestern University		(1915)	N. B. M. Ex.

* Graduation not verified.

Maine March Examination

Dr. Adam P. Leighton, acting secretary, Maine State Board of Registration in Medicine, reports the written examination held at Portland, March 14-15, 1922. The examination covered 10 subjects and included 100 questions. An average of 75 per cent. was required to pass. Seven candidates were examined, all of whom passed. The following colleges were represented:

College	Passed	Year Grad.	Per Cent.
Harvard University		(1913)	84
Tufts College Medical School		(1920) 82, (1921) 85,	87, 88
Dartmouth Medical School		(1875)	77
McGill University		(1918)	86

Book Notices

RINGWORM AND ITS SUCCESSFUL TREATMENT. By John P. Turner, M.D., Medical Inspector of Public Schools, Philadelphia. Cloth. Price, $1, net. Pp. 62, with 8 illustrations. Philadelphia: F. A. Davis Co., 1921.

This monograph is written, according to the foreword, because of the author's success in treating ringworm of the scalp by his method. The major portion of the book consists of a discussion of the clinical and pathologic features of the disease. This part is sketchily and poorly written, and contains less information about the subject than any standard textbook on dermatology. The description of Turner's method of treatment of ringworm of the scalp and body occupies a scant three pages of the book. In treating infection of the scalp, tincture of iodin, oil of cade, 20 per cent. ammoniated mercury ointment and 20 per cent. resorcin ointment are used sequentially for several days each. The author states that from one to fifteen such courses of treatment may be necessary, but that few cases fail to yield to four such courses. In treating ringworm of the body he recommends the use of tincture of iodin for three days, to be followed by ammoniated mercury ointment. The latter treatment cannot be condemned too strongly, as it is well known that these two drugs, if used together, frequently provoke a severe dermatitis. The book can scarcely be recommended as furnishing anything more than an outline of a method of treating ringworm of the scalp by the intensive use of the commonly employed agents.

THE EARLY DIAGNOSIS OF THE ACUTE ABDOMEN. By Zachary Cope, B.A., M.D., M.S., Surgeon to Out-Patients, St. Mary's Hospital, Paddington. Cloth. Price, $4. Pp. 223, with 28 illustrations. New York: Oxford University Press, 1921.

In the first place, exception must be taken to the use of such a monstrosity as the term "acute abdomen." Such medical slang is unjustifiable in either spoken or written scientific language. The proper title for this book should be "The Early Diagnosis of Acute Abdominal Diseases." While most of the facts in this monograph are well known by surgeons of experience, yet, as is stated in the preface, "there are still many who do not appreciate to the full the significance of the earlier and less flagrant symptoms of acute abdominal diseases." For these, for whom the work is written, there is an abundance of practical clinical observations presented in an interesting, scientific, and delightfully clear and concise manner. One can hardly agree with the statement on page 5 that "it is acknowledged by those who are acquainted with modern surgical results that the best and only justifiable treatment for . . . cholecystitis . . . is by surgical intervention." Chapter III, on examination of the patient, is quite incomplete, and one is struck by the lack of any evident order in performing the examination. Many valuable points are brought out, however. In the description of ruptured gastric ulcer, no mention is made of leukocytosis (either in the direct diagnosis or in the differential diagnosis, which is often of great value); blood in the vomitus, or roentgenologic examination. Fluoroscopic examination not infrequently reveals the escaped air, especially if the patient is examined in the upright position, when the air is seen as a bright zone between the upper surface of the dark liver shadow and the diaphragm. Too much emphasis is placed on obliteration of the liver dulness, caused by the escaped air. This finding is rare, and this portion of the chapter gives an entirely erroneous evaluation of this sign. The subjects with which the author has apparently had considerable experience are well discussed in the chapter on the early diagnosis of abdominal injuries, but some of the most common conditions are not taken up at all, so that one face to face with his first severe acute traumatic abdominal emergency would not get much real help from this chapter. Rupture of the liver is not discussed at all, although it is more frequent than rupture of all the other organs taken together. Edler found rupture of the liver in 183 instances, whereas rupture of other parenchymatous abdominal organs was noted in only 176. Rupture of the spleen is similarly not discussed. This, likewise, is surprising, when one remembers that, next to the liver, the spleen is the organ most frequently ruptured. Geil, in a tabulation of 494 cases in which internal organs were ruptured, found rupture of the liver in 59.9 per cent.; of the spleen in 33 per cent.; of the kidney in 21.5 per cent.; of the intestine in 11.1 per cent.; of the stomach in 7.1 per cent., and of the bladder in 4.4 per cent. Thus it is evident that the solid organs are much more frequently ruptured than the hollow ones. Cope, however, devotes practically all his attention to the latter, and even goes so far as to state that "the solid viscera of the abdomen (liver, spleen, pancreas, kidneys) are situated high up in the abdomen largely under cover of the ribs; the hollow tubes (intestines, bladder, ureter and stomach) are more exposed to injury." In general, however, the work is worthy of an accessible place in the library of all internists, general practitioners and beginners in surgery.

DIE WASSERSTOFFIONEN-KONZENTRATION. Ihre Bedeutung für die Biologie und die Methoden Ihrer Messung. Teil I. Die Theoretischen Grundlagen. Von Dr. Leonor Michaelis, A.O. Professor an der Universität Berlin. Second edition. Paper. Price, $1.70. Pp. 262, with 32 illustrations. Berlin: Julius Springer, 1922.

The first edition of this valuable work was published in 1914, and since that time, in spite of the war, the topic it covers has been enormously developed. The clinical chemist has come to recognize the importance of quantitative estimations of hydrogen ion concentration, and is no longer satisfied with the mere qualitative statement that a fluid is alkaline or acid. Professor Michaelis is recognized as one of the pioneers in this field, and his first edition was an important contribution to its development. The second edition is completely rewritten and not merely a reedited book. It will continue to be indispensable to all laboratory workers in biologic and medical chemistry. This volume merely concerns the theoretical basis of the subject, leaving to a second part the consideration of methods, thus permitting a wider consideration of the underlying principles than was given in the first edition.

TRAITÉ DE PATHOLOGIE MÉDICALE ET THÉRAPEUTIQUE APPLIQUÉE. Publié sous la Direction de Emile Sergent, Membre de l'Académie de Médecine, Médicin de la Charité, L. Ribadeau-Dumas, Médecin des hôpitaux, et L. Babonneix, Médecin des hôpitaux. Tome IV. Appareil Circulatoire. Par Pr. Vaquez, Lian, Heitz, Leconte. Paper. Price, 45 francs. Pp. 1071, with 161 illustrations. Paris: A. Maloine et Fils, 1922.

This volume represents the current views of the French school concerning diseases of the circulatory apparatus. It has been carefully written. It is distinctly not a simple compilation, for each of the four authors has put into his writing his own personality and his own views, based largely on clinical observation and investigation. Vaquez writes the introductory chapter, Lian treats of diseases of the heart, Heitz discusses the diseases of the aorta and arteries, and Leconte discusses diseases of the veins and lymphatic vessels. Clarity of style, good print and good paper with well chosen and well executed illustrations make the reading of the book a pleasure. If a second edition of the book is ever published, it is to be hoped that it will be in two volumes. As one, it is too heavy and bulky.

HYPERPIESIA AND HYPERPIESIS (HYPERTENSION). A Clinical, Pathological and Experimental Study. By H. Batty Shaw, M.D., F.P.C.P., Physician to University College Hospital. Cloth. Price, $6.50. Pp. 191, with illustrations. New York: Oxford University Press, 1922.

Hyperpiesis or hypertension is a sign of the disease hyperpiesia, the pathologic state characterized by cardiac hypertrophy and altered blood vessels. The author bases his study on the clinical histories and necropsy findings in fifty cases. The clinical features and the origin of the hyperpiesis and of the cardiac hypertrophy are discussed. Shaw believes that a toxic substance is responsible. The relation of this condition and this unidentified pressor substance to uremia, eclampsia, renal changes, infections, convulsions, coma, retinal changes, etc., is taken up. As a part of a concluding chapter the therapy of hyperpiesia is briefly considered. The book represents thoughtful study, and extended and careful clinical observation and pathologic examination. Though

much of it must still be classed as theoretical or speculative, the work is a real contribution to a still imperfectly understood subject.

The Physiology of Gout, Rheumatism, and Arthritis as a Guide to Accurate Diagnosis and Efficient Treatment. By Percy Wilde, M.D., Physician to the Lansdown Hospital, Bath. Cloth. Price, $3.50. Pp. 229, with 31 illustrations. New York: William Wood & Co., 1922.

This is an interesting and instructive book, presenting the subjects of gout, rheumatism and arthritis from a point of view not commonly accepted. The author is not in sympathy with the theories of excess nitrogenous food or of bacterial invasion as etiologic bases of these conditions; the uric acid theory he considers founded on mistakes. He contends that all these conditions are produced by aberrations of physiologic processes rather than by disease, and that these aberrations have to do with the production and elimination of lactic acid. His contentions are logically propounded, and seem well supported by experiment. His therapy is based on the physiology of the skin and its important rôle in elimination.

Glands in Health and Disease. By Benjamin Harrow, Ph.D., Associate in Physiological Chemistry, College of Physicians and Surgeons, Columbia University. Cloth. Price, $2.50. Pp. 218. New York: E. P. Dutton & Co., 1922.

This book is written for the lay, rather than for the medical, reader. It is a companion volume to the excellent book on vitamins prepared by the same author. It is a safe, reserved, clean-cut statement of the scientific knowledge concerning the glands and their functions. It is written in a simple, readable style without any of the fantastic hyperbole that has characterized some of the other recent books on this subject. It should be serviceable to those physicians who wish a simple introduction to the subject, as well as to the interested layman.

World Metric Standardization: An Urgent Issue. A Volume of Testimony Urging Worldwide Adoption of the Metric Units of Weights and Measures—Meter—Liter—Gram. Compiled by Aubrey Drury, in collaboration with Clifton Hildebrand, W. Mortimer Crocker, Harry Allcock, M.I.E.E., and other Members of the World Metric Standardization Council. Cloth. Price, $5. Pp. 524, with illustrations. San Francisco: World Metric Standardization Council, 1922.

This volume contains a summary of the testimony gathered by the World Metric Standardization Council during recent years for the purpose of supplying legislators, editors and the public with the facts available, so that they may aid the movement. Among the sixteen chapters, those on metric units in the world today, and world metric clues, are valuable as references. The book contains an adequate index.

A Pocket Surgery. By Duncan C. L. Fitzwilliams, C.M.G., M.D., Ch.M., Surgeon in Charge of Out-Patients and Lecturer in Clinical and Operative Surgery, St. Mary's Hospital, London. Cloth. Price, $3.75, net. Pp. 348. New York: Longmans, Green & Co., 1921.

Surgery is the most difficult of the clinical branches to teach from a textbook. The usual single volume for students is too brief; the "system" is too comprehensive and confusing. In using this little volume, one should bear in mind the limitations imposed by the author in the preface. It "attempts to give all of the necessary headings and only a short account of the mere details which the student should have learned elsewhere." It is of use for a hasty review, not for detailed study.

Doctors — Entre Nous. Short Stories. By James Bayard Clark. Cloth. Price, $1. Pp. 66, with illustrations. New York: The Medical Times Company, 1922.

In this book are collected three stories which originally appeared in "The Medical Pickwick." "An Unlooked for Conclusion" is a satire on the meeting of the average medical society. "How Dr. Jones Came Back" is a semihumorous sketch of rather moderate interest. "The Narrow-Minded Layman," the third sketch, is a direct attack on the Potter method of version in obstetrics, and on similar radical procedures. All will be read with interest by physicians, since the stories deal with problems directly concerned in medical life.

Miscellany

THE WEIL-FELIX TEST

The Weil-Felix test for typhus fever has been in use at the New York quarantine station for more than two years, during which time 1,698 tests have been made. Twenty of these tests were made, say Holt-Harris and Grubbs in *Public Health Reports*, July 14, on clinically positive typhus patients, forty-three in atypical or clinically doubtful cases, and 737 in cases of various acute diseases. In all but two of the clinically or atypically positive cases of typhus fever, the first Weil-Felix tests were positive. The two negative tests were made early in the disease, and later both became positive. It is stated that all cases giving a positive reaction were undoubtedly typhus fever.

The Weil-Felix reaction depends on the agglutinating property of typhus serum on certain strains of the *B. proteus* group which were isolated by Weil and Felix in 1915 from stool and urine of typhus fever patients. The discoverers designated these strains X 2 and X 19. The New York station has used the strain X 19 exclusively. A tentative test on a glass slide is made on shipboard, for which a single drop of blood is sufficient. The drop of blood is allowed to clot, and then mixed with four drops of saline solution placed near it; a drop of this mixture is carried over to three other drops of saline on the slide near by and mixed; a drop of the second mixture is then carried over to a single drop of saline placed a little farther along on the slide, thus making serum dilutions of 1:5, 1:20, and 1:40 approximately. A small amount of a twenty-four hour agar slant culture of X 19 is now placed at the margin of each dilution and emulsified. The slide is then rotated on its long axis against a dark background. A positive reaction—agglutination—is shown by the appearance of white flocculi, which are readily discernible. Prompt and complete clumping, especially in dilution 1:40, points to typhus fever. When the tentative test is positive, the patient is bled from the basilic vein and a confirmative test is made in the laboratory. With this method agglutination in dilution 1:40 is regarded as diagnostic of typhus fever. It is claimed that the Weil-Felix test not only increases the protection to the country against typhus, but is economically important in shortening the delay to commerce, and the traveling public.

BLINDNESS IN THE UNITED STATES

Statistics compiled by the Bureau of the Census on the causes of blindness in the United States show that there are 52,567 blind persons in the country, in 35,788 of whom definite information as to the cause of blindness was obtained. In 13,818, or 38.6 per cent. of the 35,788 for whom the cause was reported, the blindness was caused by some specific disease of the eye, such as cataract or glaucoma; and in 5,623 cases, or 15.7 per cent., it was a result of some general disease, such as measles, meningitis or scarlet fever. Accidents were responsible for 5,913 cases, or 16.5 per cent. of the total. Of this number, 1,429 persons lost their sight through explosives or firearms. Cataract, the leading cause, was reported by 4,896, or 13.7 per cent. Glaucoma, ranking next, was reported by 1,932, or 5.4 per cent. Atrophy of the optic nerve was given as the cause by 1,756, or 4.9 per cent. Ophthalmia neonatorum, or "babies' sore eyes," was reported by 1,198, or 3.3 per cent. of the total number reported. Recent statistics of admissions to schools for the blind show that there has been a marked decrease in the amount of blindness due to this cause. These figures show that only 14.7 per cent. of the new students admitted in 1917-1918 were reported blind from ophthalmia, as against 24.2 per cent. of the students then attending who had entered the previous year. This decrease reflects the more general adoption of scientific methods of treatment, and especially the routine use of silver nitrate drops in the eyes of infants. The campaign to eliminate trachoma also appears to be successful, as trachoma and

"sore eyes" together were reported by only 3 per cent. of the total for 1920, as against 5.2 per cent. for 1910. The causes of blindness, as summarized in the 1920 census, are given in the accompanying table:

CAUSES OF BLINDNESS, 1920

Causes	Number	Per Cent. Distribution
Total blind persons returning schedules	40,913	.....
Cause reported	35,788	100.0
Definitely reported causes	26,333	73.6
Specific affections of the eye	13,816	38.6
Cataract	4,896	13.7
Glaucoma	1,932	5.4
Atrophy of the optic nerve	1,756	4.9
Ophthalmia neonatorum	1,198	3.3
Trachoma	555	1.6
Diseases of the retina	497	1.4
Corneal ulcer	264	0.7
Cancer and other neoplasms	247	0.7
Diseases of the iris	240	0.7
Other specific affections	2,231	6.2
General diseases	5,623	15.7
Measles	797	2.2
Meningitis	526	1.5
Scarlet fever	416	1.2
Kidney disease and diabetes	308	0.9
Influenza (grip)	282	0.8
Typhoid fever	253	0.7
Syphilis and locomotor ataxia	252	0.7
Smallpox	235	0.7
Other general diseases	2,554	7.1
Accidents	5,913	16.5
Explosives	797	2.2
Firearms	632	1.8
Falls	445	1.2
Flying objects (not from explosions)	380	1.1
Cutting or piercing instruments	335	0.9
Burns	113	0.3
All other accidental injuries	3,211	9.0
Poisoning	311	0.9
Foreign substances in the eye	431	1.2
All other definitely reported causes	195	0.5
Indefinitely or inaccurately reported causes	9,119	25.5
Congenital (not otherwise specified)	2,635	7.4
Neuralgia	548	1.5
Exposure to heat	507	1.4
Sore eyes	497	1.4
All other	4,932	13.8
Combination of different classes of causes	380	1.1
Cause unknown or not reported	5,125	.....

MEDICINE IN POLAND

Polish medicine, says Dr. W. Szumowski, professor in the Cracow Medical School, began in the thirteenth century with Vetellus, a Silesian, who wrote "Perspectiva," a work on the anatomy of the eye. In the thirteenth and fourteenth centuries, Polish students studied in Paris and Bologna. The University of Cracow was founded in 1364, one of its component schools being a medical faculty with two professors. Owing to the death of Cassimir the Great, its founder, the school was suspended until 1400, when the university was reinaugurated by Ladislaw Jagello, who gave the university its name, Jagellonian. The study of medicine was, however, neglected, and sometimes there was not even a professor. Physicians in that period usually combined astrology, mathematics and medicine, as happened with Martin Krol and Peter Gaszowiec, both professors of medicine in the university, and Nicolas Kopernik, the astronomer and physician, who was a pupil in the same school. In the sixteenth century, the Cracow Medical School assumed greater importance, and its most famous character was Mathias de Miechow, also called Miechowita, professor of medicine, rector of the university and author of several medical, geographic and ethnographic books. The only diplomas granted were bachelor and master, the first degrees of doctor being granted in 1527 to three Poles. Among famous Renaissance physicians may be mentioned Joseph Strus (Struthius, 1510-1568), who graduated in 1535 at Padua, where he was appointed professor of theoretical medicine. At Padua he published his important work on the pulse ("Ars sphygmica"), which was received so warmly that 800 copies were sold in one day. His reputation was so great that he was called to attend the two greatest princes of his time, Soliman II and Phillip II. Another prominent physician was Sebastian Petrycy (1554-1626), whose sculpture still adorns the scepter of the school. A period of decay followed, until the reorganization of the school in the latter part of the eighteenth century, when the two chairs were filled by Andrew Badurski and Raphael Czerwiakowski. Among modern representatives of the Cracow Medical School may be mentioned Louis Bierkowski (1801-1860), known through his anatomic and surgical charts; Joseph Dietl (1804-1899), a famous clinician and one of those who did most to stop the practice of routine venesection; Joseph Majer (1804-1878), a physiologist, first president of the Academy of Sciences of Cracow; Louis Teichmann (1823-1895), professor of anatomy, known through the crystals named after him; and the surgeons Jean Mikulics (1850-1905) and Louis Rydygier (1850-1920).

Another Polish medical school was at Vilna. Its most remarkable product was Andrew Sniadecki (1768-1838), a physician, biologist and chemist, who began to study medicine at Cracow, and finally graduated in Pavia, Italy. On his return to Vilna, he became a professor and one of the most popular physicians in the province. His most important work was "Teorja jestestw organicznych" (Theory of Organized Beings) published in 1804, and translated into both German and French. His ideas apparently influenced the German biologists John Muller and Wrzosek, and the chemist Liebig. The Vilna Medical School remained open until 1840, when it was finally closed by the Russian government.

The medical school at Warsaw was founded in 1809, even before the university, which was founded in 1816. It was closed during the 1830 revolution, and remained quiescent nearly thirty years. The lack of physicians became acute, and Alexander II permitted the opening of a medicosurgical academy at Warsaw, in 1857. In 1862, the academy became a part of the Warsaw Superior School. Among its most prominent professors were Titus Chalubinski and Ignace Baranowski. In 1869, the Superior School was named Imperial University, and its Russian tendencies were intensified, until after the war it passed finally under Polish control.

Medical courses were also organized by the Austrian government at Lvow in 1773, the first professor there being Andrew Krupinski. A university was established in 1784, but it was soon closed, and the Lvow School was authorized to give only the diploma of "surgeon." The present medical school was opened in 1894.

Medicolegal

Another Court Favors Charitable Hospitals

(Emery v. Jewish Hospital Association (Ky.), 236 S. W. R., 577)

The Court of Appeals of Kentucky, in affirming a judgment overruling demurrers to the defendant's answer and dismissing the petition in this action by the plaintiff to recover damages for injuries which he alleged that he had sustained through the negligence of the defendant, its servants, agents, and employees, while he was employed in operating an elevator on its premises, says that there was no precedent in that jurisdiction on which the rights of the parties having such relations to each other as those in this case could be appealed to for guidance. But the conclusion reached is that a charitable corporation, organized and operating under Sections 879-882 of the Kentucky Statutes, for the purpose of conducting a hospital, to which all funds are donated or devised by individuals for the purpose of operating a hospital for the treatment of the poor and needy sick, and are expended for that purpose, no profit or gain accruing to any person from the operation of said institution, is not liable in damages for the negligent acts of its managers, servants or employees, to any persons whatsoever. The manager, servant or employee will be liable in damages to any person whom his negligent act in the course of his employment may injure; but the corporation is not liable. This principle is adopted for the reason that the funds of such an institution are donated to it or devised to it in trust that they will be expended for the charitable purpose of ministering to the poor and needy sick, and no other; and such a corporation is a trustee of funds for such purposes, and neither it nor its trustees or officers receive any profit from its operation; and while it is not held that, according to the ordinary principles governing the administration of a trust, these funds might not be diverted to the payment of damages incurred in its administration, they should not be

diverted to any such purpose. The diversion of such funds in such a way would probably destroy the institution; and a wise public policy forbids such a result. It is to the interest of the public that such institutions be maintained; and a principle which requires that the interest of an individual be subordinated to the good of the public is not a stranger to our legal principles. It probably might be said that it is a hard rule which exempts such an institution from liability to a stranger, or to an employee; but it only works the same hardship on a stranger or employee as the principle which exempts a governmentally conducted charity from any liability to them; and the defendant is doing the same service as such an institution governmentally conducted might do.

Rules for Determining Percentage of Loss of Vision

(Turpin v. St. Regis Paper Co. et al. (N. Y.), 192 N. Y. Supp. 85)

The Supreme Court of New York, Appellate Division, Third Department, in affirming an award under the workmen's compensation law, says that the award was questioned only on the ground that the evidence did not show a loss of 16 per cent. of vision, for which the award was made. A similar question arose in *Johnson* v. *United States Railroad Administration*, 185 N. Y. Supp. 338, in which the question was, what loss of use of an arm had been suffered; and the court said: "There is, of course, no method by which the percentage loss of the use of an arm can accurately be determined. It is at best a matter of rough estimate and approximation. . . . The question is one of fact for the industrial commission, to be determined by it on such proof as physicians may give, in accordance, however, with its own experience, good sense and judgment." This court thinks this was the correct rule to be applied in this case. The court does not think that it should determine whether the Snellen test or some other test furnishes a proper rule for guidance of the board in determining percentage of loss of vision. Necessarily some test must be used; but this is only an element of the evidence, and the board must pass upon the evidence, determining what evidence it shall accept and what weight shall be given to its various parts. By the Snellen test, the claimant's eyes, with the aid of glasses, showed 84 per cent. of normal vision, or a loss of 16 per cent. Evidence was presented tending to show that this was the measure of the "direct or central" vision only, while there are other elements of vision that must be taken into account to determine the "useful vision," namely, "field vision" and the "binocular vision." Under this standard of measurement, the claimant's useful vision was found to be 93.5 per cent., showing a loss of 6.5 per cent. Although one physician testified that another formula was more accurate than the Snellen test, the board was not bound by the evidence of the expert. It was for the board to determine, the nature of the test having been fully explained, which test it should use in determining what partial loss of the use of the eye the claimant had suffered. The board was still at liberty to make use of its experience, good sense, and judgment in determining what the actual loss was. The board may have been of the opinion that the direct vision was the vision most essential to the employee engaged in hazardous employments, and that he was handicapped in his work to the extent that his direct vision was damaged, even though his field vision and binocular vision were normal.

Cannot Require Examination in Slander Case

(Mann v. Bulgin (Idaho), 203 Pac. R. 463)

The Supreme Court of Idaho says that the plaintiff in this action for slander alleged that on a certain date the defendant in a public address maliciously referred to him as a syphilitic renegade; that the defendant stated that the plaintiff was syphilitic; that he could prove it; that he had in his possession a certificate by a physician to that effect. The defendant denied all the allegations of the complaint. Thereafter, the district judge made an order appointing three physicians to make a physical examination and test of the plaintiff for the purpose of ascertaining whether or not he "has or had or is afflicted with the disease commonly known as syphilis, or was or is a syphilitic person." The plaintiff refused to submit his person to the board of physicians so appointed for examination. The case being called for trial, the plaintiff again refused to comply with the terms of the order, and thereupon the court entered judgment dismissing the action.

In reversing that judgment, the supreme court goes on to say that the language charged in the complaint was actionable per se or in and of itself. The only reasonable construction of the language of the complaint was that it alleged that the defendant charged the plaintiff with being syphilitic at the time the words were uttered; otherwise the language charged would not be actionable per se. When a complaint charges the use of language which is actionable per se, the falsity of the defamatory word is presumed, and it is not necessary that the plaintiff shall in the first instance offer any proof that the words were false. A defense of truth must be specially pleaded; and a plea of justification must be as broad as the charge. As the pleadings stood on the trial of this case, the defendant was entitled to show the truth of the charge made by proving that, at the time the words were uttered, the plaintiff was infected with syphilis. Was the defendant entitled to the order of the court requiring the plaintiff to submit his person to examination?

On the question as to whether or not, in an action for damages for personal injuries, the court may require the plaintiff in the case to submit to physical examination by a board of physicians appointed by the court, and in case of refusal dismiss the action, the authorities in the United States are in hopeless conflict, and are not reviewed here, nor is any opinion expressed on that question, as it is considered that the situation in this case was entirely different. Here the plaintiff was not suing to recover damages for personal injuries, but to recover damages for injury to his good name and reputation caused by the language alleged to have been uttered by the defendant. The damage of which the plaintiff complained did not result from the falsity of the alleged charges. The damage to him was just as great whether the charges were true or false; hence he was relieved of the burden of proving the falsity of the charges. But the law would not suffer him to recover damages for injury to a reputation which he did not justly deserve to have. Consequently, the defendant could relieve himself from liability for the damage done by proving that the words uttered were true; but he must take the entire burden of proving justification on himself. This court knows of no rule of the common law or statutory provision of the state of Idaho which authorizes the court to enter an order requiring a plaintiff who has been damaged in his good name and reputation to submit to physical examination, in order to supply a defendant with the means of proving that the statements made by him were true.

Society Proceedings

COMING MEETINGS

American Academy of Ophthalmology and Oto-Laryngology, Minneapolis, Sept. 19-23. Dr. Luther C. Peter, 1529 Spruce St., Philadelphia, Sec'y.

American Association of Obstetricians, Gynecologists and Abdominal Surgeons, Albany, N. Y., Sept. 19-21. Dr. James E. Davis, 111 Josephine Ave., Detroit, Secretary.

American Electro-Therapeutic Association, New York, Sept. 19-22. Dr. A. Bern Hirsh, 71 W. 94th St., New York, Secretary.

American Roentgen Ray Society, Los Angeles, Sept. 12-16. Dr. H. E. Potter, 122 S. Michigan Ave., Chicago, Secretary.

Colorado State Medical Society, Colorado Springs, Oct. 3-5. Dr. F. B. Stephenson, Metropolitan Bldg., Denver, Secretary.

Indiana State Medical Association, Muncie, Sept. 27-29. Dr. Charles N. Combs, Terre Haute, Secretary.

Medical Association of the Southwest, Hot Springs, Ark., Oct. 4-6. Dr. W. H. Bailey, 115 West 21st Street, Oklahoma City, Okla., Sec'y.

Missouri Valley, Medical Society of the, St. Joseph, Mo., Sept. 21-22. Dr. Charles W. Fassett, 115 E. 31st St. Kansas City, Mo., Secretary.

Nevada State Medical Association, Reno, Oct. 6-7. Dr. Horace J. Brown, Goldfield, Secretary.

Pennsylvania, Medical Society of the State of, Scranton, Oct. 2-5. Dr. W. F. Donaldson, Jenkins Arcade, Pittsburgh, Secretary.

Utah State Medical Association, Salt Lake City, Aug. 31-Sept. 2. Dr. W. L. Rich, Boston Bldg., Salt Lake City, Secretary.

Washington State Medical Association, Tacoma, Sept. 5-6. Dr. C. H. Thomson, 508 Cobb Bldg., Seattle, Secretary.

Wisconsin, State Medical Society of, Green Lake, Sept. 6-8. Dr. Rock Sleyster, Wauwatosa, Secretary.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

American Journal of Diseases of Children, Chicago

July, 1922, **24**, No. 1

*Bilateral Hypoplastic Cystic Kidneys. Report of Case Simulating Chronic Diffuse Nephritis in Girl Three Years of Age. C. H. Greene, Rochester, Minn.—p. 1.
*Ultraviolet Radiation in Rickets. Effect on Calcium and Inorganic Phosphorus Concentration of Serum. B. Kramer, H. Casparis and J. Howland, Baltimore.—p. 20.
*Thymus Apoplexy. An Unusual Manifestation of Hemorrhagic Disease of Newly Born. H. R. Wahl and D. Walthall, Rosedale, Kan.—p. 27.
*Food Requirements of Children. IV. Carbohydrate Requirement. L. E. Holt and H. L. Fales, New York.—p. 44.
Food Requirements in New-Born Infants. Study of Spontaneous Intake. H. K. Faber, San Francisco.—p. 56.
Data in Three Thousand Seven Hundred and Forty-Two Pirquet Tests. S. McLean, New York, and H. Jeidell, Salt Lake City.—p. 73.
Vital Capacity of Lungs of Children. C. A. Stewart, Minneapolis and O. B. Sheets, Hollywood, Calif.—p. 83.
*Neuropathic Manifestations in Infants and Children as Result of Anaphylactic Reaction to Foods Contained in Their Dietary. W. R. Shannon, St. Paul.—p. 89.

Bilateral Hypoplastic Cystic Kidneys.—A case simulating chronic diffuse nephritis, occurring in a girl, 3 years of age, is reported by Greene. Clinically, the findings were those of a long standing renal insufficiency and were identical with those seen in cases of typical chronic interstitial nephritis. The family history was negative. The condition was present from birth, but symptoms of renal disturbance first appeared at the age of 8 months. At this time the child had convulsions that probably marked the first of a series of uremic attacks. Following the convulsions, the patient was put on a faulty diet and evidences of rachitis followed. Blood smears showed a pronounced secondary anemia. The remarkable clinical improvement following a single transfusion is of interest. This is especially so since there apparently was no great stimulation of the hematopoietic system. The increase in the erythrocyte count lasted for about a month, which corresponds well with the average life of the transfused blood corpuscle. During this period there was a great improvement in the general condition of the patient and even a slight increase in the phenolsulphonephthalein output, indicating that the kidneys were functionally benefited by the general improvement. The specific gravity of the urine was low, the limits of variation being from 1.005 to 1.012. Albumin was present in the urine throughout the whole period of the disease. The amount was increased during the uremic attacks, but was never large. No Bence-Jones or protein body other than serum protein was demonstrable in the urine. Casts were absent even during the terminal stages of the disease. Death was due to uremia, though starvation acidosis undoubtedly was a contributing factor. The pathologic picture was that of bilateral hypoplasia of the kidneys with cyst formation. The renal tubules were characterized by marked cystlike dilatations, especially in the proximal convoluted tubules. There was no evidence of obstruction and the dilatation apparently was secondary to functional hypertrophy of the tubules.

Ultraviolet Radiation in Rickets.—Five children showing clinical evidences of rickets, confirmed by roentgenographic examination of the bones, were treated by Kramer et al. by systematic exposure to the rays from the mercury vapor quartz lamp. This was followed in every instance by healing of the rachitic process in the bones. The inorganic phosphorus concentration of the serum of these children was low (from 2.7 to 3.2 mg.) before the treatment was begun and gradually increased to a maximum of 6 mg. with the appearance of calcium deposition in the bones. So far as could be judged, healing of the bones following radiation occurred at about the same time as it does after the administration of cod liver oil. The changes in the phosphorus concentration of the serum were identical with those observed after cod liver oil treatment. The pigmented skin of the negro child did not interfere with the action of the light rays. The colored children required no more intensive treatment to bring about healing than did the white children.

Thymus Apoplexy.—The two cases reported by Wahl and Walthall are similar in many respects. Symptoms of meningeal irritation, lateral nystagmus and generalized icterus were present in both infants. Labor, while not normal, was not unduly difficult or prolonged in either case. In both cases there was a marked increase in the coagulation time of the blood. In each case the necropsy showed a cerebral hemorrhage, inflammatory changes in the lungs suggestive of syphilis, and a diffuse hemorrhagic infiltration of the thymus in which the extravasation of blood was both intralobular and interlobular and was associated with suppuration, necrosis and marked proliferation of the reticular epithelial cells. The cases differ in that the second patient was aged 6 weeks and the first 4 days. In the first case, the hemorrhages were more generalized and extensive; labor was more difficult; the immediate cause of death was cerebral hemorrhage. In the second case, bronchopneumonia was probably the more immediate factor causing death. In both cases the Hassall's corpuscles were numerous but in the first case they were dilated and often contained a purulent exudate forming early DuBois abscesses. On the other hand, the second case showed a striking perivascular inflammatory reaction with swelling of the vascular endothelium and also marked thrombophlebitis of the smaller veins. One of the large veins in the first case was partly occluded by a thrombus. The condition seems to be associated with syphilis more than any other factor, but circulatory stasis, trauma, nonspecific infections and a hemorrhagic tendency are contributing, if not the main, factors in some cases. There is no way of making a clinical diagnosis.

Carbohydrate Requirement of Children.—The carbohydrate intake of more than 100 healthy children, from 1 to 18 years of age, studied by Holt and Fales, averaged 10 gm. per kilogram. A diet excessive in carbohydrate leads to an abnormal deposition of fat without a corresponding increase in muscle development. Children taking such a diet have feeble resistance to infection. There is evidence that a relationship exists between the high proportion of carbohydrate in the modern diet and the prevalence of dental caries. Definite digestive disturbances, chiefly intestinal, may be produced when the carbohydrate in the diet is excessive. There may result increased fermentation with loose acid stools or constipation with flatulence and abdominal distention. When long continued, these disturbances are very difficult to control.

Neuropathic Manifestations in Children a Food Anaphylaxis.—Eight cases showing marked evidences of the presence of the so-called neuropathic diathesis in infants and children are presented by Shannon. In four of these cases, definite evidence of the exudative diathesis was also present, while in another case there was a positive history of such a condition in the past. The remaining three cases gave no evidence suggestive of the presence of an exudative diathesis. All the patients showed the presence of protein sensitization by cutaneous tests. All showed definite relief from the nervous symptoms on the institution of specific therapy directed at the proteins to which they were sensitive. In all but one of the eight cases the proteins concerned were those of foods contained in the dietaries of the patients. In one case animal emanations of pollen proteins might have played a part. In one case the nervous symptoms could be relieved or brought on by the exclusion from or the addition to the diet of the food to which the patient was sensitive. Evidence is presented showing that anaphylaxis is a sound, theoretic basis for the explanation of many of the symptoms of the so-called neuropathic diathesis.

American Journal of Public Health, Chicago

July, 1922, **12**, No. 7

Two Twilight Zones in Health Administration. E. R. Kelley.—p. 563.
Recent Applications of Principles of Nutrition. H. Violle and T. C. Merrill, Paris.—p. 568.
Results of Health Program in Summer Play School. H. Harap, New York.—p. 594.
New Venture in School Medical Inspection. G. T. Palmer, Detroit.—p. 599.

Determination of Value of Certain Soaps in Disinfecting Wall and Floor Surfaces. J. R. Conover and J. L. Laird, Philadelphia.—p. 602.
Sanitary Condition of Confections. F. W. Tanner and E. Davis, Urbana, Ill.—p. 605.
Effect of Peptone on Toxigenic Property of Diphtheria Bacillus No. 8. H. L. Wilcox, New York.—p. 608.

American Journal of Roentgenology, New York

July, 1922, **9**, No. 7

Production of Penetrating Roentgen Rays. W. Duane, Cambridge, Mass.—p. 391.
Supernumerary Pedal Bones. M. I. Bierman, St. Louis.—p. 404.
Rectosigmoid Apparatus. H. W. Soper, St. Louis.—p. 412.
*Roentgenologic Findings in Mongolism. M. W. Clift, Flint, Mich.—p. 420.
Standardization of Roentgen-Ray Reports. P. M. Hickey, Detroit.—p. 422.
Roentgenology and Internal Medicine. L. F. Barker, Baltimore.—p. 425.
*Appendicitis Due to Foreign Bodies in Lumen of Appendix. J. T. Murphy, Toledo.—p. 437.
Some Practical Results with Potter-Bucky Diaphragm. R. B. Wilsey, Rochester, N. Y.—p. 441.

Roentgenologic Findings in Mongolism.—The only condition which may be considered as in any way characterizing the roentgenologic picture of mongolism according to Clift is the disproportionate developmental deficiency on the part of nose and maxilla. As regards the sella turcica, the findings are far from uniform. The sella differs in shape in about the same ratio as in normal persons. In fact, there is no single characteristic roentgenologic sign in this disease, and the only departure from normal is a generalized delay of bone development. This feature, except for a slight selective character on the part of the nose and maxilla, is common to a number of other diseases, some of endocrine origin and others due to obscure causes.

Foreign Bodies in Appendix.—Murphy reports two cases of appendicitis in which a pin was found in the appendix. One patient, a child, aged 17 months, nine months previously swallowed a pin. The roentgen ray showed the pin in the region of the ileocecal valve.

Archives of Dermatology and Syphilology, Chicago

July, 1922, **6**, No. 1

*Erythema Multiforme Confined to Mucous Membranes. J. Butler, Minneapolis.—p. 1.
Cutis Verticis Gyrata (Unna). E. A. Oliver, Chicago.—p. 6.
Hemangiosarcoma of Skin. A. M. Greenwood, Boston and T. K. Lawless, Chicago.—p. 10.
Adenoma Sebaceum and Tuberose Sclerosis of Brain. G. M. Olson, Minneapolis.—p. 21.
*Morphea Associated with Hemiatrophy of Face. E. D. Osborne, Rochester, Minn.—p. 27.
Acnitis. Report of Case. H. E. Alderson, San Francisco.—p. 35.
*Studies on Blood Cholesterol in Syphilis. A. R. McFarland, Rochester, Minn.—p. 39.
*XXVI. Results in Treatment of Wassermann Fast Syphilis by Intravenous Mercuric Chlorid. A. H. Conrad and C. H. McCann, St. Louis.—p. 50.
*Salol in Smallpox. J. A. K. Birchett, Jr., and S. R. Lustberg, Vicksburg, Miss.—p. 55.
Syphilis of Salivary Glands. J. E. Kemp and J. E. Moore, Baltimore.—p. 57.

Erythema Multiforme of Mouth.—Two cases of severe stomatitis are cited by Butler. The mouth, tongue, and labial membranes were involved equally in both patients. The skin was normal in every respect. Two days following the examination one patient had beginning erythematosus patches on the dorsal aspect of the hands and feet that quickly developed into typical bullous lesions, and these made a correct diagnosis an easy matter. The other patient clarified the situation by saying that he, too, had suffered similar outbreaks on his hands and feet together with associated mouth lesions during the two preceding years, both attacks occurring in the spring, and attributed by him to plowing in the fields during rainy weather. Careful observation of this patient throughout the course of his illness failed to reveal any skin manifestations of the disease.

Morphea with Hemiatrophy of Face.—In the six cases reviewed by Osborne the evidence points strongly to involvement of the central nervous system. The history of trauma from four months to six years preceding the onset of symptoms in four of the cases, the necropsy findings of Steven, and the neurologic findings suggesting an old inflammatory process in the brain of one of the patients, are all incriminating evidence. The close relationship between facial hemiatrophy and morphea is emphasized by the common etiologic factors involved and in the similarity of skin changes seen in the two conditions.

Blood Cholesterol in Syphilis.—The positive Wassermann reaction on the blood, McFarland asserts, apparently does not depend on high cholesterol value. Blood cholesterol values in syphilitic patients, in general, tend to be medium and low rather than high. The amount of arsphenamin given and the time between injections do not obviously affect the blood cholesterol values. There is, apparently, no relation between the cholesterol values and the clinical and serologic response of the patient. The only recognizable relation between the clinical type of syphilis and blood cholesterol values is the large proportion of high cholesterol estimations in syphilis of the central nervous system.

Intravenous Administration of Mercury in Syphilis.—Results obtained in the patients whom Conrad and McCann have treated lead them to believe that, in those cases in which the routine treatment has failed to reduce the Wassermann reaction or improve the clinical symptoms, mercury administered intravenously should be given a fair trial. Advantages claimed for this method over other modes of mercuric injections are that quicker results in treatment are obtained, a more accurate grading of dosage is made possible; the course of the disease can be more carefully observed, and a practically painless injection is assured the patient.

Salol in Smallpox.—The action of phenyl salicylate in smallpox was studied by Birchett and Lustberg. Salol, 10 grains, four times a day, was the sole medicament used, and careful observations were made of results. It was noted that the patients who began the medication in the preeruptive stage were left with only a few scars, and even those receiving the medicament during the eruptive stages showed less scarring than those who received no therapy. The severe confluent forms left a surprising aftermath. Some scarring, of course, remained as a remnant of the disease, but far less disfigurement than is usually seen in such cases.

Boston Medical and Surgical Journal

July 13, 1922, **187**, No. 2

*Digitalis in Cardiac Disease. H. A. Christian, Boston.—p. 47.
Quackery, Miracle Healing and Medical Cults. R. W. Lovett, Boston.—p. 53.
Gummatous Cervical Adenitis. W. P. Coues, Boston.—p. 65.

Digitalis in Heart Disease.—The dangers or toxic effects of digitalis, Christian states, are more serious as met with in medical books than in medical practice. Some one of these toxic effects or so-called digitalis dangers really should be sought rather than avoided in digitalis therapy. The real dangers in digitalis therapy are three: (*a*) Using a poor digitalis preparation. (*b*) Consciously or unconsciously prescribing too little of a potent digitalis preparation. (*c*) Not knowing when digitalis should be started and stopped. Digitalis usually is given in too small, i. e., insufficient dosage. Christian says he has yet to see the patient in whom too much digitalis had been given prior to seeing the patient. The large majority of cardiac patients seen by him have had too little digitalis; a small percentage have had enough digitalis; none have had too much; some have had too little from the point of view of dosage when actually they should have had none. Digitalis poisoning, of course, is possible, but it is one of the rarities of medicine. Digitalis is good for the symptoms and physical signs the patient has, provided those symptoms and signs are the result of cardiac insufficiency, i. e., decompensation. The indications for starting digitalis therapy are the presence of symptoms and physical signs which are the result of cardiac inefficiency, i. e., decompensation. The symptoms and physical signs of cardiac insufficiency are breathlessness, cough, cyanosis, edema, pain, weakness, nausea, vomiting, enlargement of the liver, decreased urine output, rapid pulse. The indications for stopping digitalis are improvement in these symptoms and signs or the occurrence of some of the toxic effects of digitalis. The toxic effects of digitalis are nausea, vomiting,

certain arrhythmias, as bigeminal pulse and heart block, rarely diarrhea. It needs to be recognized that very often the digitalis which the patient purchases has but slight potency. A serious error is to regard a drop as a minim and to prescribe 15 drops of tincture of digitalis, thinking to give 15 minims; the patient taking 15 drops often gets but 5 minims, rarely more than 7 minims—both very small doses. This error accounts for much unconscious prescribing of too small a dose. The rest comes from the digitalis being of low potence. There should be definite evidences of cardiac insufficiency before digitalis is given. Increased heart rate alone is never the result of cardiac insufficiency and never the indication for digitalis therapy. Paroxysmal tachycardia does not respond to digitalis and digitalis does not affect simple tachycardia. No murmur of whatsoever sort, nor enlargement of the heart, in itself is an indication for digitalis therapy. Digitalis may be given in a single massive dose, or in a modified massive dose method, or in regularly repeated small doses. Any of these methods is effective. The chief difference lies in the length of time needed to produce a result. For the average cardiac case there is no real preference. In a few very severe cases the modified massive dose method is better. Occasionally the single massive dose may be life-saving. Digitalis therapy is very simple. Enough of a potent leaf, prepared in any way, should be given by any accepted method of dosage, and the result is most satisfactory in almost every case. Standardizing on animals is helpful but by no means essential.

July 20, 1922, **187**, No. 3

*Management of Cancer of Bladder. G. G. Smith, Boston.—p. 97.
Nutritional Disorders in Light of Recent Investigations. A. F. Hess, New York.—p. 101.
Skin Irritants: External and Internal. C. G. Lane, Boston.—p. 108.
Treatment of Fracture Involving Lower End of Radius with Anterior and Posterior Wooden Splints. T. K. Richards, Boston.—p. 113.
*Two Cases of Early Carcinoma of Uterus Treated by Vaginal Panhysterectomy. L. E. Phaneuf, Boston.—p. 115.

Cancer of Bladder.—Smith asserts that all tumors of the bladder (barring some varieties, as fibromas) are potentially, if not actually, malignant; that early diagnosis by means of the cystoscope is the first requisite for successful treatment. Every misbehaving bladder should be considered guilty until it is proved innocent. The methods of treatment consist of fulguration, radiation by means of implantation of radium, excision of the tumor, total cystectomy, or, in hopeless cases, cauterization and permanent suprapubic drainage. The particular measure or combination of measures selected depends on the type of tumor which is disclosed by careful study of the case.

Panhysterectomy for Early Carcinoma of Uterus.—One of Phaneuf's cases was a borderline case in which the disease was discovered only by examination of curettings from the uterus; the other case was an epidermoid carcinoma grafted on a procidentia of many years' standing. Both patients were subjected to vaginal panhysterectomies and made uneventful recoveries.

California State Journal of Medicine, San Francisco

July, 1922, **20**, No. 7

Some Practicable Problems Confronting Medical Profession. H. G. Brainerd, Los Angeles.—p. 215.
Medical Education of Present and Near Future. R. L. Wilbur, San Francisco.—p. 218.
Provisions of Workmen's Compensation Act of California Relative to Furnishing of Medical Treatment in Compensation Cases. W. H. Pillsbury.—p. 221.
Problems of Industrial Accident Insurance. J. H. Parkinson, Sacramento.—p. 222.
*Successful Removal of Extramedullary Cord Tumor in Lower Dorsal Region, Causing Severe Compression Symptoms: Recovery. W. F. Schaller and A. Weeks, San Francisco.—p. 224.
Clinicians Past, Present and Future. H. C. Moffitt, San Francisco.—p. 229.
Fundamental Factors in Etiology and Treatment of Chronic Intestinal Disease. H. F. Freidell, Santa Barbara.—p. 232.
Group Medicine: Its Value to Profession and Public. D. J. Frick, Los Angeles.—p. 234.
*Pathology and Bacteriology of Excised Tonsils and Effect of Roentgen-Ray Therapy on Bacterial Flora of Tonsils. F. R. Nuzum, Santa Barbara.—p. 237.
Modern Hospital on Pacific Coast. J. B. Cutter, Watsonville.—p. 239.

Extramedullary Cord Tumor in Lower Dorsal Region.—The outstanding features in the case cited by Schaller and Weeks were: onset with severe dorsal root pain, followed by motor loss in left lower extremity and evidence of both cord and root compression below the ninth dorsal cord segment; progressive paraplegia by involvement of right lower extremity; predominant flexor "shortening" paralysis; bilateral pathologic pyramidal tract signs and heightened tendon reflexes in lower extremities; positive Beevor sign; superficial sensation affected below the tenth dorsal root distribution for pain and temperature; deep sensation affected particularly for vibration sense; reflex movements of defense present; absence of sphincter involvement; colonic crises; compression syndrome in cerebrospinal fluid; at operation complete removal of an intradural glioma at the eleventh dorsal cord segment; convalescent period complicated by anemia, toxic polyneuritis, decubitus; ultimate complete recovery.

Bacteriology of Excised Tonsils.—Of 218 pairs of tonsils removed, 7 per cent. presented no microscopic evidence of disease; 96.1 per cent. harbored hemolytic streptococci. Of the three groups of hemolytic streptococci, alpha, alpha prime and beta, the latter were found much more frequently. There seemed to be a relation between the pathology of the excised tonsil and the type of organism it harbored. Poured plates were found much more satisfactory than streaked plates. Roentgen-ray therapy was effective in reducing the size of the tonsils in but 16 per cent. of this series. Hemolytic streptococci, the essential organisms in chronically infected tonsils, were permanently removed in but 50 per cent. of the patients treated.

Canadian Medical Association Journal, Toronto

June, 1922, **12**, No. 6

Broadening Scope of Mental Medicine. A. T. Mathers, Winnipeg.—p. 371.
Symptoms in Diagnosis of Pulmonary Tuberculosis. J. H. Elliott, Toronto.—p. 377.
Differential Diagnosis. J. H. Elliott, Toronto.—p. 379.
*Tuberculosis Survey of 1346 School Children in Saskatchewan. R. G. Ferguson, Fort Qu'Appelle, Sask.—p. 381.
Ergot, Quinin and Pituitary Extract. A. H. Wright, Toronto.—p. 383.
*Metabolic Findings in Diagnosis and Treatment of Diseases of Thyroid. G. S. Fahrni, Winnipeg.—p. 386.
Intestinal Obstruction. H. W. Riggs.—p. 390.
Creatinuria in Certain Diseased Conditions. A. T. Cameron and A. Gibson, Winnipeg.—p. 393.
Intravenous Injection of Mercurosal in Treatment of Syphilis. W. T. Williams, Toronto.—p. 401.
Place of Drugs in Medical Treatment. D. S. Lewis.—p. 402.
Cesarian Section; Four Cases. A. Mackinnon, Guelph, Ont.—p. 405.
Roentgen-Ray Examination of Pulmonary Tuberculosis. H. M. Tovell, Toronto.—p. 408.
New Order. G. Jackson, Toronto.—p. 411.
Carcinoma of Prostate. J. C. McClelland, Toronto.—p. 415.
Obiter Scripta. C. F. Martin.—p. 418.
Incubation Period of Lethargic Encephalitis. Case Developing Within Five Days of Exposure. F. Godfrey, Mimico, and N. B. Gwyn, Toronto.—p. 420.
Etiology of Cancer. W. Boyd.—p. 421.

Tuberculosis in Children.—A survey made by Ferguson of 1,184 white children disclosed that ten, or 0.84 per cent., showed clinical signs, symptoms and roentgen-ray evidence of active tuberculosis. These children were advised to take treatment in the sanatorium. Thirty, or 2.5 per cent., showed signs or symptoms more or less suspicious of activity. These children were referred to their family physician for observation.

Metabolism in Diseases of Thyroid.—In a series of 105 persons, thirty-eight, or 36.19 per cent., had normal metabolic rate, sixty-two, or 59.09 per cent., had abnormally high metabolic rate, while five, or 4.76 per cent., had abnormally low rate. In analyzing the group of thirty-eight cases with normal metabolic rate, the final diagnoses come under the following heads in order of frequency: nontoxic goiters of different types; psychoneuroses; obesity and mental defectives; incipient tuberculosis; essential hypertension and so-called goiter wreckage cases. In the group of sixty-two cases with hyperthyroidism, Fahrni is convinced that many could not have been diagnosed definitely without the knowledge of existing basal metabolism. In the third group, that

of hypothyroidism, were found five very definite cases of myxedema. There was no familial tendency in this group of five, and the origin was apparently spontaneous, with no history of degenerative or inflammatory disease of the thyroid gland nor of operation on the gland.

Georgia Medical Association Journal, Atlanta

July, 1922, **11**, No. 7

Eczema Parasiticum. J. W. Jones, Atlanta.—p. 253.
Acute Mastoiditis. M. H. Stuart, Moultrie.—p. 255.
Typhus in Siberia. H. M. Davison, Atlanta.—p. 258.
Medical Sects in United States and Abroad. N. Alpert, Atlanta.—p. 263.
*Knife Blade in Brain. T. C. Davison, Atlanta.—p. 267.
Compensation. F. Hames, Atlanta.—p. 269.

Knife Blade in Brain.—Davison's patient was stabbed in the left side of the head with a pocket knife, the blade penetrating the skull and was broken off. Three days following the injury, the patient became dizzy, "turned sick and blind" for the time being. On the seventh day, the patient noticed a tingling in the foot, leg and hand on the right side which developed into a numbness and paralysis. He lost control of his urine and stool the latter part of the second week. He does not remember events during the third week and has only a hazy recollection of being brought to the hospital three weeks following his injury. Roentgen-ray examination showed the knife blade, 1¼ inches in length, in the skull, in the left rolandic area. When the section of the skull was lifted the dura was exposed, showing the opening by the blade through which exuded a thick greenish-yellow pus. The brain was not pulsating in this area. A crucial incision made in the dura exposed an abscess the size of a small hen's egg. Normal pulsation of the brain returned following evacuation of the abscess. Six hours following operation tingling returned in the foot, leg and arm and the patient could move the foot slightly. In twelve hours sensation was returning and he could move the arm and leg slightly. Twenty-four hours after operation he could move the leg freely, sensation was improving rapidly and he could move the arm, but not so well as the leg. Sensation returned rapidly to the right side with some hyperesthesia in arm and leg. The patient was dismissed from the hospital seventeen days following the operation with good use of himself, except slight incoordination of the muscles of the right hand and arm and slight right sided facial paralysis.

Illinois Medical Journal, Oak Park

July, 1922, **42**, No. 1

Maternal Death Statistics. C. E. Mongan, Somerville, Mass.—p. 1.
Value of Pyelography Before Undertaking Surgical Measures for Relief of More Obscure Types of Abdominal Pain. V. J. O'Conor, Chicago.—p. 9.
Legislation and Its Effect on Medical Profession. J. R. Neal, Springfield.—p. 13.
Dose of Radium. H. Robarts, Belleville.—p. 15.
Thoracoscopy and Its Practical Importance, Especially in Surgery of Chest. H. C. Jacobaeus, Stockholm, Sweden.—p. 17.
Intranasal Injection of Alcohol in Treatment of Hyperesthetic Rhinitis and Some of Nasal Neuroses. O. J. Stein, Chicago.—p. 22.
Omental Cap Over an Acute Appendix. R. L. Fisher, Chicago.—p. 25.
Xiphoiditis. J. K. Narat, Chicago.—p. 27.
What Shall We Do to Be Saved—Professionally? C. W. Lillie, East St. Louis.—p. 28.
Penetrating Injuries of Eye by Steel Particles. F. Allport, Chicago.—p. 31.
Orthopedic Surgery: Have Present Advanced Methods in Diagnosis and Treatment Reduced Morbidity or Lessened Period of Disability. J. L. Wiggins, East St. Louis, Ill.—p. 35.
Clinical Interpretations of Basal Metabolism Test. H. Swanberg, Quincy.—p. 39.
Suprapubic Prostatectomy. J. S. Eisenstaedt, Chicago.—p. 41.
Roentgen Ray in Diagnosis of Certain Gastro-Enteric Lesions. L. S. Goin, Peoria.—p. 44.
Vomiting of Gallstones. M. Pfeiffenberger, Alton.—p. 51.

Journal of Bone and Joint Surgery, Boston

July, 1922, **4**, No. 3

Specialist in Surgery and His Viewpoint. N. Allison, St. Louis.—p. 421.
*Chronic Arthritis. L. T. Swaim, Boston.—p. 426.
*Operative Treatment of Scoliosis. A. M. Forbes, Montreal, Can.—p. 446.
Intraperineural Neurotomy in Spastic Conditions. J. J. Nutt, New York.—p. 453.
*Unusual Fractures. C. W. Peabody, Boston.—p. 459.
Flat Hand (Manus Planus): Its Correction Essential to Normal Function of Hand. J. E. Goldthwait, Boston.—p. 469.
Open Reduction of Old Congenital Hip Dislocation. M. A. Bernstein, Chicago.—p. 481.
Use Destruction in Joints. A. W. Meyer, Palto Alto, Calif.—p. 491.
*Bone Sarcoma. J. W. Gibbon, Charlotte, N. C.—p. 512.
Osteoma of Cervical Spine. M. S. Henderson, Rochester, Minn.—p. 518.
Treatment of Congenital Dislocation of Hip as Practised by Professor Denuce at Bordeaux, France. Z. B. Adams, Boston.—p. 523.
Tendon Transplantation for Musculospiral (Radial) Nerve Injury. R. W. Billington, Nashville, Tenn.—p. 538.
Postoperative Care of Flexion Contraction of Hip. S. F. Stewart, Los Angeles.—p. 548.
Painful Traumatic Shoulder. A. Gibson, Winnipeg, Man.—p. 552.
Congenital Ankylosis of Joints of Hands and Feet. E. M. Miller, Chicago.—p. 560.
Simplified Method of Measuring Amplitude of Motion in Joints. N. G. Rosen, New York.—p. 570.
Spinal Pathology in Relation to Ocular Manifestations, with Report of Cases. C. L. Lowman, Los Angeles.—p. 580.
Operation for Hypertrophied Patella. G. E. Bennett, Baltimore.—p. 593.
Clinical and Experimental Study of Free Transplantation of Fascia and Tendon. W. E. Gallie and A. B. Le Mesurier, Toronto.—p. 600.

Chronic Arthritis.—Swaim emphasizes the fact that there are three distinct types of arthritis: infectious, atrophic and hypertrophic, and that these types differ etiologically, pathologically and clinically, respond to treatment differently and should, therefore, be differentiated. Clinical data seem valueless unless these types are studied as separate pathologic entities.

Operative Treatment of Scoliosis.—Although operative procedures for scoliosis cannot be considered to have the test of time, Forbes believes they have been sufficiently encouraging to continue their employment. The day may come when the field of usefulness of operative procedures may be extended, but he hesitates to recommend their general use, because the operation is a severe one. It should not be carried out except after deep thought and consideration, and then only by those who are accustomed to operate on the spine. Perhaps, at a later date, its field of usefulness will be broadened, but until it is possible to prove the enduring character of the ankylosis and the general benefit to the patient, as shown by increased height and marked improvement in general condition, it should not be employed except in desperate cases.

Unusual Fractures.—One of Peabody's cases presented the "cartwheel fracture" of the textbooks, in which the leg is caught in a revolving wheel, the resulting torsion completely disrupting the lower end of the femur from the shaft at the epiphyseal line. The patient was not caught in a cartwheel, but was knocked down by a motor car, and in addition the break had the complication of being compound from the protrusion of the shaft through an external wound. The second case was a fracture of the spine at a most uncommon point, and producing a skiagraphic impression which is rather startling. The neural arches of the first lumbar vertebra were fractured between the superior and inferior articular processes, the fragments separating as the spine hinged in flexion on the disc in front; so that the first glance at the roentgenogram gave the impression of complete loss of bony continuity in the spinal column. The last patient, thrown from his horse, was caught under the falling animal, with a consequent rupture and complete dislocation of the pubic synchondrosis; the two halves of the pelvis, rotating in opposite directions at the sacroiliac articulations, produced a fracture of both transverse processes of the fifth lumbar vertebra.

Sarcoma of Femur.—Gibbon reports the case of a boy, aged 16, who had a tumor of the lower end of the right femur which proved to be a large round cell sarcoma. Within three weeks after curettage, the patient came back complaining of a return of severe pain. On examination it was evident that the tumor had recurred locally, and was infiltrating the soft parts on the inner side of the knee, where there was a considerable swelling. That this was then a rapidly growing sarcoma clinically seemed to be a just conclusion, and amputation was advised. The parents, however, refused this, and again all of the tumor tissue possible was removed, and the area cauterized with phenol followed by alcohol. Three weeks later the leg was amputated in the upper third of the thigh, a local recurrence having again

occurred at about the end of three weeks. Roentgenograms of the thorax at this time showed no metastases. The boy is well six months after the amputation.

Journal of Experimental Medicine, Baltimore

July 1, 1922, **36**, No. 1

*Megacaryocytes in Peripheral Circulation. G. R. Minot, Boston.—p. 1.
Experimental Epidemiology. S. Flexner, New York.—p. 9.
Outbreak of Mouse Typhoid and Its Attempted Control by Vaccination. C. J. Lynch, New York.—p. 15.
Experimental Epidemiology. I. Artificially Induced Epidemic of Mouse Typhoid. H. L. Amoss, New York.—p. 25.
Id. II. Effect of Addition of Healthy Mice to Population Suffering from Mouse Typhoid. H. L. Amoss, New York.—p. 45.
Experiments on Normal and Immune Mice with Bacillus of Mouse Typhoid. L. T. Webster, New York.—p. 71.
Identification of Paratyphoid-Enteritidis Strain. Associated with Epizootics of Mouse Typhoid. L. T. Webster, New York.—p. 97.
Immunologic Distinctions of Two Strains of Mouse Typhoid Group Isolated During Two Spontaneous Outbreaks Among Same Stock. H. L. Amoss and P. P. Haselbauer, New York.—p. 107.
Surface Tension of Serum. III. Recovery After Lowering by Surface-Active Substances. P. Lecomte du Nouy, New York.—p. 115.
*Infectious Motor Paralysis in Young Rabbits. J. H. Wright and E. M. Craighead, Boston.—p. 135.
Structure and Differentiation of Specific Cellular Elements of Pars Intermedia of Hypophysis of Domestic Pig. S. Maurer and D. Lewis, Chicago.—p. 141.

Megacaryocyte in Peripheral Circulation.—Minot points out that a megacaryocyte is seen commonly as an occasional cell in the peripheral blood of patients with myelogenous leukemia. Less commonly they appear in relatively large numbers. These giant cells also may occur in the blood under other conditions. Their presence is indicative of a bone marrow under intense strain.

Experimental Infectious Motor Paralysis.—The attempt made by Wright and Craighead to infect young rabbits and guinea-pigs with material containing in all probability the virus of human infantile paralysis failed. Incidentally, and presumably accidentally, a paralytic disease hitherto undescribed was observed in young rabbits associated with the presence of an organism showing certain definite characters. This organism is found widely distributed in the organs of the affected animals and can be demonstrated in the urine. The active destruction by the organism of the nerve cells of the spinal cord is particularly striking, and gives complete explanation for the paralysis observed clinically. With the organism present in the urine the spread of the disease by contact can easily be understood. The transfer of the infection from animal to animal by fleabites is possible but not probable. The nature of the observed organisms is in doubt. They represent probably an intermediate stage in the life history of some protozoan parasite.

Journal of Industrial Hygiene, Boston

July, 1922, **4**, No. 3

Undernourishment in Industry. I. W. H. Bunn.—p. 93.
German Literature on White Lead Question, 1921. L. Teleky.—p. 100.
Back and Foot Strain. P. D. Wilson.—p. 106.
Occupational Sickness: Review. E. A. Rusher.—p. 125.

Journal of Pharmacology and Experimental Therapeutics, Baltimore

July, 1922, **19**, No. 6

*Biologic Reactions of Arsphenamin. III. Immediate Toxicity as Contrasted with Late Ill Effects, and Rôle of Agglutination in Production of Former. J. Oliver and S. S. Yamada, San Francisco.—p. 393.
*Studies on Strychnin. S. Weiss and R. A. Hatcher, New York.—p. 419.

Immediate Toxicity and Late Ill Effects of Arsphenamin.—Oliver and Yamada state that disodium arsphenamin may produce ill effects by means of either its physical or its chemical properties. The physical toxicity produces an early reaction and is the result of intravascular agglutination of the red cells and multiple embolism. The chemical toxicity requires some time for the production of anatomical lesions. These consist of parenchymatous degenerations particularly in the kidney and liver.

Studies on Strychnin.—Studies were made by Weiss and Hatcher on a method for the extraction of small amounts of strychnin from tissues, the absorption of strychnin by red corpuscles of the cat, the rate of disappearance of strychnin from the blood stream of the cat and the elimination of strychnin in the urine of man. The liver appears to be the principal protective organ with reference to acute poisoning by strychnin, the kidney to be concerned mainly with the elimination of traces of the poison which reenter the circulation after having been fixed temporarily in those tissues which are incapable of destroying the poison.

Journal of Radiology, Omaha

July, 1922, **3**, No. 7

Study of Legg's Disease, with Report of Cases. R. G. Giles, Boston.—p. 261.
Use of Radium Needles in Treatment of Cancer. C. F. Bowen, Columbus, O.—p. 265.
Roentgen Ray as a Microscope. W. W. Wasson, Denver.—p. 268.
Less Common Uses of Roentgen-Ray Therapy. C. E. Richards, Toronto, Can.—p. 271.
Postoperative Mastoid Treatment with Roentgen Ray. C. Goosmann, Cincinnati.—p. 273.
Roentgen-Ray and Clinical Findings in Normal Chests of Children Six to Ten Years of Age.—p. 274.
Roentgen-Ray Analysis of Sounds of Speech. A. E. Barclay and W. Nelson, Manchester, Eng.—p. 277.

Journal of Urology, Baltimore

July, 1922, **8**, No. 1

Urological Problems. H. G. Bugbee, New York.—p. 1.
*Homologue of Prostate in Female. F. P. Johnson, Baltimore.—p. 13.
*Clinical Value of Mercurophen in Treatment of Gonococcal Urethritis. C. H. de T. Shivers, Philadelphia.—p. 35.
Metastatic Complications of Gonorrhea and Their Treatment. A. R. Fraser, Cape Town, S. A.—p. 49.
Surgery of Scrotum and Its Contents Under Regional Anesthesia. W. R. Meeker, Rochester, Minn.—p. 61.
Anomalous Relationship of Right Ureter to Inferior Vena Cava. R. C. Graves and L. M. Davidoff, Boston.—p. 75.
Sacral Anesthesia in Perineal Prostatectomy. Modification of Young's Operation with Summary of Cases. A. J. Crowell and R. Thompson, Charlotte, N. C.—p. 81.
*Renal Retention Due to Seminal Vesiculitis. Report of Three Cases. E. G. Mark and R. L. Hoffman, Kansas City, Mo.—p. 89.
Physiological and Pharmacologic Studies of Prostate Gland. V. Effect of Prostatectomy on Integration of Muscular Movements. D. I. Macht and J. L. Ulrich, Baltimore.—p. 99.

Homologue of Prostate in Female.—The urethra of the female Johnson states corresponds only with that portion of the prostatic urethra of the male which lies between the internal urethral orifice and the orifice of the prostatic utricle. The remainder of the male urethra is represented in the female by the vestibule. The whole homologue of the prostate in the female is here demonstrated for the first time. It consists of: (*a*) The urethral glands which are the homologues of those prostatic glands in the male which lie above the orifice of the prostatic utricle (therefore true urethral glands). (*b*) Skene's ducts which are the homologues of the prostatic glands which lie below the orifice of the prostatic utricle (therefore sinus glands). Bartholin's and Cowper's glands are true homologues. It is also demonstrated for the first time that the glands of Littré are represented in the female by a few poorly developed glands which have received the name "minor vestibular glands."

Mercurophen in Gonorrheal Urethritis.—Mercurophen has yielded uniformly good results in Shivers' experience in the treatment of gonococcal urethritis and particularly in acute infections. All cases with the exception of three showed a considerable decrease in the number of infected cells per field after the first and second treatments. The solutions of mercurophen employed in this study were from 1:4,000 to 1:10,000; these produced slight or no irritation of the urethra. All treatments with mercurophen should be preceded by thoroughly cleansing the parts to be treated with a warm 1:8,000 solution of potassium permanganate.

Seminal Vesiculitis Causes Renal Retention.—Mark and Hoffman report three cases of ureteral stenosis with hydronephrosis due to disease of the vesicles. In one case it was possible to readily pass ureter catheters from below and yet there was complete retention above the juncture of the vesicle with the ureter.

Kansas Medical Society Journal, Topeka

July, 1922, **22**, No. 7

Some Atypical Surgical Cases. R. C. Dugan, Ottawa.—p. 195.
Relationship of Orthopedics to Neurology. K. R. Werndorff, Wellington.—p. 197.

Kentucky Medical Journal, Bowling Green

June, 1922, **20**, No. 6

Clinical Relation of Tonsils to Thyroid. J. A. Stucky, Lexington.—p. 382.
Fracture of Femoral Neck: Osteoma in Popliteal Space. B. Owen, Louisville.—p. 385.
Surgery of "Stomach Trouble." B. F. Robinson, Berea.—p. 388.
Two Cases of Pemphigus. J. E. Hays, Louisville.—p. 390.
Case of Apparent Dextrocardia Disproved by Instrumental Investigation. J. W. Moore, Louisville.—p. 392.
Diagnosis and Treatment of Syphilis. G. W. Payne, Bardwell.—p. 393.
Therapeutics in Children. A. L. Kincheloe, Owensboro.—p. 395.
Baby's Second Summer. J. W. Bruce, Louisville.—p. 396.
Symptomatology of Rectal Diseases. W. L. Mosby, Bardwell.—p. 398.
Pneumococcic Meningitis. S. G. Dabney and S. Graves, Louisville.—p. 400.
Suggestions for Malaria Control. B. W. Smock, Greenville.—p. 401.
Treatment of Malarial Fever. T. J. Marshall, Bardwell.—p. 402.
Combating Diphtheria. R. Lockhardt, Cleveland.—p. 404.
Alveolodental Pyorrhea. H. B. Ray, Tompkinsville.—p. 406.
Congenital Malposition of Left Kidney with Blood Supply from Common Iliac Artery. J. A. Kasper, Louisville.—p. 410.
Present Status of Radiation Therapy. D. Y. Keith, Louisville.—p. 411.
Headaches. R. H. Cowley, Berea.—p. 419.
Dietetic Treatment of Surgical Diabetes. J. J. Ezell, Hopkinsville.—p. 421.

Laryngoscope, St. Louis

June, 1922, **32**, No. 6

Etiology and Pathology of Loss of Vision from Accessory Sinus. L. E. White, Boston.—p. 415.
Autroscopy of Maxillary Sinus. W. Spielberg, New York.—p. 441.
Calculi of Nose and Throat: Report of Cases. L. W. Smith, Butte, Mont.—p. 444.
Laryngectomy for Cancer of Larynx with Modified Technic and Attempted Formation of Skin Graft Tube in Place of Larynx. R. H. Goldthwaite, Camp Benning, Ga.—p. 446.
Schwabach and Rinné Tests. G. W. Mackenzie, Philadelphia.—p. 451.
Acoustic Neuromas. J. J. Shea, Memphis, Tenn.—p. 460.
Meningitis. S. MacC. Smith, Philadelphia.—p. 465.
Psychology of Deafness. T. Hubbard, Toledo, Ohio.—p. 473.
Case of Temporosphenoidal Brain Abscess Following Acute Mastoiditis. R. Almour, New York.—p. 478.

Michigan State Medical Society Journal, Grand Rapids

July, 1922, **21**, No. 7

Medical Problem. W. J. Kay, Lapeer.—p. 281.
*Unusual Case of Hypernephroma. E. C. Baumgarten, Detroit.—p. 286.
Cardiac Neurosis. H. A. Reye, Detroit.—p. 287.
Future Public Health Interests and Activities. V. Scope. J. Sundwall, Ann Arbor.—p. 292.

Unusual Case of Hypernephroma.—The points of interest in Baumgarten's case were: (1) the malignant neoplasm had been present and size unchanged for about twenty years without causing any disability or appreciable discomfort. (2) It undoubtedly had its origin in an accessory suprarenal gland deriving its blood supply from an anomalous vessel, lying between the layers of the transverse mesocolon. The patient made an uneventful operative recovery and showed no evidence of further trouble for some time, when she complained of pains in the upper left arm and over the eighth rib on the right side. She refused a roentgen-ray examination of the bones. Shortly afterward she developed similar trouble in the left femur and at this time a fusiform enlargement could be palpated in the humerus, and there was also an irritating cough with occasional blood streaked sputum. A diagnosis of a generalized metastasis was made. The patient died shortly afterward.

Missouri State Medical Association Journal, St. Louis

July, 1922, **19**, No. 7

Some Accomplishments of Organized Medicine in Missouri. A. H. Hamel, St. Louis.—p. 291.
Plan for Reestablishing Four Years' Course in School of Medicine at University of Missouri. G. L. Noyes, Columbia.—p. 293.
*Congenital Syphilis and Eruption of First Teeth. E. Moody, Joplin.—p. 295.
Acrodynia in Infants: Report of Cases. J. Zahorsky, St. Louis.—p. 296.
Tuberculosis of Bones and Joints. J. E. Stewart, St. Louis.—p. 300.
Examination of Market Milk in St. Louis. M. G. Seelig, St. Louis.—p. 303.

Congenital Syphilis and Eruption of Teeth.—That there is a definite inhibition of the eruption of the first teeth of some children who have a syphilitic taint seems to be an unquestionable fact. In the cases cited by Moody that illustrate this condition there have usually been no other signs or symptoms of the disease. These cases seem to indicate that congenital syphilis may be an even more important cause of failure of the first teeth to erupt than rickets and that the disease may cause no changes whatever in the shape, size, arrangement or interfere in any way with the enamel formation of these deciduous teeth even when the inhibition of eruption has been to a marked degree.

New Jersey Medical Society Journal, Orange

July, 1922, **19**, No. 7

Rôle of Medical Profession in Prevention of Tuberculosis. B. S. Pollak, Secaucus.—p. 187.
Mind of Physician. G. K. Dickinson, Jersey City.—p. 189.

New Orleans Medical and Surgical Journal

July, 1922, **75**, No. 1

Price of Neglect in Acute Purulent Otitis Media. E. R. Gandy, Alexandria, Ala.—p. 1.
Hysterectomy — Indications for and Selection of Type of Operation. W. D. Phillips, New Orleans.—p. 8.
Suggestions in Treatment of Certain Diseases of Skin. J. M. King, Nashville.—p. 17.
Basal Metabolic Rating as Basis of Classification and Treatment of Thyroid Conditions. H. P. Jones, New Orleans.—p. 28.

New York Medical Journal and Medical Record

July 19, 1922, **116**, No. 2

Physiologic Adjuvant in Rest Cure of Pulmonary Tuberculosis. S. A. Knopf, New York.—p. 65.
Roentgen-Ray Treatment of Diseases of Generative Organs. I. S. Hirsch, New York.—p. 68.
Fugacious Edema of Mastoid Region with Paroxysmal Hemoglobinuria. C. J. Koenig, Paris, France.—p. 74.
Conquest of Typhoid Fever at Chickamauga Park, Ga., R. A. Keilty, Danville, Pa.—p. 77.
Esophagoscopy. M. C. Myerson, Brooklyn.—p. 82.
Labyrinthine Surgery. J. M. Smith, New York.—p. 85.
Infection with Organism of Vincent. C. Barker, New Haven, Conn.—p. 88.
Status of Lumbar Puncture and Prevention of Its Complications. H. W. Traub, Chicago.—p. 91.
Operative Treatment of Scoliosis. S. Kleinberg, New York.—p. 93.
Colon Bacillus Pyelitis. P. Goldfader, Brooklyn.—p. 95.
*Case of Pulmonary Abscess. D. Greenberg, New York.—p. 98.
Weaning the Infant. J. H. Marcus, Atlantic City, N. J.—p. 101.

Chronic Pulmonary Abscess.—A case of chronic pulmonary abscess lasting about a year, with a severe productive cough and with large quantities of odorless sputum, is reported by Greenberg as a unique case. In reference to the symptomatology, the presence of an increasingly severe, productive cough, together with weakness, usually associated with symptoms of fever, such as chills or chilly sensations, with languor and anorexia, with loss of weight and pain in the chest, may be said to be more often present than not. The cough and the large quantities of malodorous sputum are the most constant of the symptoms. In the author's case there was also dyspnea and marked weakness and loss of weight, with vague pains in the right side of the chest—but the sputum remained odorless. The diagnosis is usually not difficult when the abscess ruptures early in the course of the disease as it usually does, giving rise to the characteristic sputum. In cases where no such rupture occurs or when the sputum is not characteristic there may be considerable difficulty in arriving at a diagnosis. The conditions with which chronic pulmonary abscess may be confused are chronic tuberculosis and capsulated empyema, bronchiectasis, neoplasm and broken down gumma of the lung and actinomycosis.

New York State Journal of Medicine, New York

July, 1922, **22**, No. 7

*Radium Treatment of Parotid Tumors. D. A. Quick and F. M. Johnson, New York.—p. 297.
Limitations of Roentgenologic Diagnosis. R. D. Carman, Rochester, Minn.—p. 302.
Roentgentherapy in Malignant Disease. G. E. Pfahler, Philadelphia.—p. 305.
New Method of Applying Radium Through Cystoscope. L. Buerger, New York.—p. 312.
Classification of Neurosyphilis: Concerning Therapy. L. H. Cornwall, New York.—p. 316.
Personality Defects as Neuropsychiatric Problems. I. J. Sands, Brooklyn.—p. 323.
Is Shape of Public Arch Factor in Causation of Cystocele? F. C. Goldsborough, Buffalo.—p. 327.

Radium Treatment of Parotid Tumors.—Of eleven operable cases treated with radium by Quick and Johnson, three of which were recurrent, ten are at the present time clinically

free of any neoplastic disease, but in five of these at the tumor site there is remaining a small quiescent fibrotic mass. These patients have been well from 6 months to 3½ years. The eleventh case in this group is still undergoing treatment, with a very satisfactory response. Of forty-three inoperable cases, twenty-three of which were recurrent, twelve are clinically free of active disease for periods ranging from 6 months to 3½ years. Ffteen patients were definitely improved, locally and generally, and sixteen were so far advanced as to render quite negligible and palliative effect of the treatment. Of the cases reported as clinically free of disease, and which at the time of treatment were subjected to biopsy, five were of the mixed tumor type, four were reported as carcinoma, or adenocarcinoma, one as squamous epithelioma and one as Mikulicz disease. The four cases of carcinoma that are clinically well represent a group that is considered very unfavorable from the standpoint of surgery. Only one of these was considered at all operable. The extent of disease of the other three cases precluded the hope of any benefit from attempted excision.

Northwest Medicine, Seattle

July, 1922, **21**, No. 7

Diagnostic Problems in Pulmonary Tuberculosis. R. C. Matson, Portland, Ore.—p. 199.
Fractures and Dislocations of Spine; Report of Five Cases. H. S. Willard, Tacoma.—p. 206.
*Dislocated Cervical Vertebrae. R. Anderson, Tacoma.—p. 212.
Dislocation of Knee. L. H. Meadows, Clear Lake, Wash.—p. 213.
Congenital Absence of Both Tibiae, Treated by Bone Transplants. R. T. Congdon, Wenatchee, Wash.—p. 214.
Subphrenic Abscess. J. D. Sternberg and W. H. Watson, Portland, Ore.—p. 217.
Renal Function Tests. L. G. Rowntree, Rochester, Minn.—p. 220.
Treatment of Postoperative Complications. N. A. Johanson, Seattle.—p. 221.

Dislocation of Cervical Vertebrae.—In Anderson's case there was an extreme dislocation of the fourth on the fifth cervical vertebra without any cord lesions. Treatment instituted in this case was a combination of the manipulation and fixation methods. After a hazardous attempt to reduce the dislocation by manipulation under ether proving unsuccessful, resort was had to the slower and more conservative method of casts and braces. For several days before an anesthetic was given, about 20 pounds traction was applied to head by means of Sayre's bandage. While under ether, the most strenuous efforts were made to reduce the dislocation under guidance of a bedside roentgen-ray machine, but without results either for better or worse. The immobilization method was the only alternative, so a cutlass of plaster-of-Paris was applied. Neck was kept in casts for three months when a brace was applied which he has been wearing about a year. He now has no pain, complains only of some stiffness in neck; no nerve complication at all, and there never has been in spite of marked dislocation. Patient is gradually being weaned away from the brace.

Philippine Journal of Science, Manila

March, 1922, **20**, No. 3

Physiography and Geology of Samar Island, P. I. H. G. Schenk, Manila.—p. 231.
New Cercopides of Philippines. V. Lallemand, Brussels.—p. 273.
Identification of Bacteria Pathogenic to Plants Previously Reported from Philippine Islands. C. G. Welles, Manila.—p. 279.
Some Results with Intelligence Tests in Philippine Islands. A. v. H. Hartendorp.—p. 287.
Pressures Required to Cause Stomatal Infections with Citrus-Canker Organism. F. T. McLean and H. A. Lee, Manila.—p. 309.
*Schick Reaction in Filipinos. L. Gomez, R. Navarro and A. M. Kapauan, Manila.—p. 323.
Relation of Age of Citrus Tissues to Susceptibility to Citrus Canker. H. A. Lee, Manila.—p. 331.
Mounted Specimen of Monkey Eating Eagle (Pithecophaga Jefferyi) of Philippines. R. W. Shufeldt, Washington, D. C.—p. 343.
Three New Species of Derbidae (Homoptera). F. Muir, Honolulu.—p. 347.
*Food Value of Philippine Bananas. W. Salvador, Manila.—p. 363.

Schick Reaction in Filipinos.—In all 1,030 persons of various ages were tested by Gomez, Navarro and Kapauan. Eighty-eight, or 8.5 per cent., were positive. Most of the positives were found during the first eight years of life, especially during early infancy and childhood. The number of positives decreased considerably from the age of 8 years up to the adult period. The females, as a general rule, showed a greater number of positive reactions than the males; they averaged 14 per cent. of the total number of females examined, whereas the males only showed 5.8 per cent. of positives.

Food Value of Philippine Banana.—The components that Salvador found make up the edible portion of the Philippine banana include water, fat, protein, carbohydrates, organic acids, and mineral matter. Of these water is hardly to be considered as a nutrient, though it plays an important part in food as a diluent and solvent. The fat, protein and carbohydrates contribute in varying degree to the supply of fuel for the production of heat and energy. Besides this universal function, the fat and the carbohydrates serve especially to furnish fatty tissue in the body, while the protein is the chief source of muscular tissue. The organic acids are minor, though important, constituents of food. Because of their conversion into carbonates within the body, they are useful in furnishing the proper degree of alkalinity to the blood and to the various other fluids, besides being of particular value as appetizers. The mineral or inorganic salts are necessary to supply material for the teeth and bones, besides having an important place in the formation of hemoglobulin in the blood and in the cellular structure of the entire body. Philippine bananas, as shown by the analyses, are essentially carbohydrate foods, the percentages of protein and fat being correspondingly low. Their nutritive value lies chiefly in the sugars they contain, although the acids and salts exercise an important function in the digestive processes. The sugars are present, both as reducing and as sucrose. Although the banana is rich in carbohydrates, its low content of protein indicates that it is not a well-balanced ration, but should be eaten with beans, peas, or other vegetables rich in protein, or with lean meat in order to secure a proper quantity of protein in the diet.

South Carolina Medical Association Journal, Greenville

June, 1922, **18**, No. 6

Magnesium Sulphate as Aid in Anesthesia. G. T. Tyler, Greenville.—p. 153.
Dyspepsia Common Symptom Syndrome: Differentiation from Important Surgical Conditions of Abdomen. W. M. Sheridan, Spartanburg.—p. 155.
Experience with Radium. T. H. Dreher, Matthews.—p. 158.
Acute Peritonitis. H. H. Plowden, Charleston.—p. 164.
Passing of Old Oaken Bucket. L. Banov, Charleston.—p. 166.
Sterilization Versus Propagation. B. O. Whitten, Clinton.—p. 167.
Methods of Treatment of Ureteral Calculus. M. Weinberg, Sumter.—p. 168.
Transfusion of Blood. S. O. Black, Spartanburg.—p. 171.
Hypertrophied Tonsils and X-Ray. F. D. Rodgers, Columbia.—p. 172.
Present Status of Wassermann Reaction. J. R. Allison, Columbia.—p. 173.
Chronic Suppurative Otitis Media. W. C. Twitty, Rock Hill.—p. 174.
Syphilis and Abortions. R. E. Seibels, Columbia.—p. 175.

U. S. Naval Medical Bulletin, Washington, D. C.

June, 1922, **16**, No. 6

Hydrogen-Ion Concentration. C. W. O. Bunker.—p. 973.
Aviation Medicine in United States Navy. J. F. Neuberger.—p. 983.
Developments in Diagnosis and Treatment of Syphilis. L. W. Shaffer.—p. 1011.
Old Anatomic School at Padua. W. M. Kerr.—p. 1015.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

British Journal of Experimental Pathology, London

June, 1922, **3**, No. 3

*Infection of Lice (Pediculus Humanus) With Rickettsia Prowazeki by Injection Per Rectum of Blood Platelets of Typhus Infected Guinea-Pigs and Reinfection of Other Guinea-Pigs From These Lice. A. Bacot and J. Segal.—p. 125.
*Variations in Diastatic Power of Urine in Relation to Its Reaction; Suggested Method for Estimation of Diastase Content. E. C. Dodds.—p. 133.
*Investigation Into Etiology of Dental Caries. I: Nature of Destructive Agent and Production of Artificial Caries. J. McIntosh, W. W. James and P. Lazarus-Barlow.—p. 138.
*Isohemagglutination. S. C. Dyke.—p. 146.

Relative Value of Human and Guinea-Pig Complement in Wassermann Reaction. A. F. Hayden.—p. 151.
*Experimental Immunization Against Bacillus Dysenteriae (Shiga) and its Toxins. S. Kanai.—p. 158.

Infection of Lice with Rickettsia Prowazeki.—The injection of lice with a concentrated emulsion of platelets obtained by fractional centrifugalizations of the blood of a typhus infected guinea-pig, according to Bacot and Segal, affords a sure and quick method of obtaining the development of *Rickettsia prowazeki* in these insects. The lice thus infected can be used to convey typhus fever to fresh guinea-pigs. The parallel development of typhus virus and *Rickettsia prowazeki* in successively passaged guinea-pigs is demonstrated and also in lice infected from guinea-pigs after twenty-three blood or brain passages.

Estimation of Diastase Content of Urine.—The original technic for the diastase reaction is criticized by Dodds because it takes no account of the varying reaction of normal urine. A modified technic is described whereby the urine is diluted with a phosphate buffer solution, thus bringing all urines to the optimum p_H before its starch-digesting power is tested. Ammoniacal decomposition, by making the urine more alkaline, decreases the diastatic power as determined by the old method, but has no effect on the method suggested. Diastase tends to cling to urinary deposits, hence all urines should be well shaken.

Etiology of Dental Caries.—The examination of selected carious material by McIntosh, James and Lazarus-Barlow showed the constant presence of a definite type of bacillus. Teeth left in contact with pure cultures over prolonged periods showed changes almost identical with those found in natural caries. The bacilli, to which it is proposed to give the name *B. acidophilus-odontolyticus*, in their resistance to and formation of acid resemble the "acidophilus" group of Moro; biologically, however, there are several points of difference.

Isohemagglutination.—Absorption tests performed by Dyke on serums of Groups II, III and IV using corpuscles of Groups I, II and III confirm von Dungern and Hirschfeldt's hypothesis as to the distribution and nature of agglutinins and agglutinable factors in the four blood groups.

Experimental Immunization Against Dysentery Bacillus.—Attempts made by Kanai to secure, by subcutaneous and oral administration of killed vaccines, a solid active immunity against the potent soluble toxin of *B. dysenteriae* (Shiga), intravenously administered, have not been attended with the striking success realized in previous work when active immunity was sought to the live bacilli similarly administered. Therefore, comparative estimates of the value of oral and subcutaneous methods in this connection are not at present possible.

British Medical Journal, London

July 1, 1922, **2**, No. 3209

Modern Treatment of Syphilis. L. W. Harrison.—p. 1.
Place of Ophthalmology in Undergraduate Medical Curriculum. W. G. M. Byers.—p. 4.
*Diagnostic Value of Gastric Fractional Test Meals. H. S. Pemberton. —p. 7.
*Treatment of Human Hookworm Infection with Carbon Tetrachlorid. L. Nicholls and G. G. Hampton.—p. 8.
Mechanism of Drug Action. O. C. M. Davis.—p. 11.
Visceral Crises. A. Mills.—p. 13.
*Quinin Necrosis of Muscle. P. Figdor and D. D. Pinnock.—p. 14.
Blood at 100 Years of Age. F. G. Macnaughton.—p. 14.
Treatment of Erysipelas by Vaccines. J. R. Russell.—p. 15.

Diagnostic Value of Fractional Test Meals.—The acidity curves plotted from fractional test meals Pemberton regards as being of some value in obtaining knowledge of the factors which modify the acidity. Alterations in these factors bear some sort of relation to gastro-intestinal lesions; hence the acidity curves may throw some light on these lesions. These curves seem divisible into at least six types of varying diagnostic value. By comparison with other methods, the fractional test meal is at least admissible as an aid to diagnosis.

Carbon Tetrachlorid Treatment of Hookworm Infestation.—Nicholls and Hampton relate the case of a murderer under sentence of death who volunteered to take carbon tetrachlorid. Six c.c. was given one hour after the midday meal, and the same day he passed four worms (*Ascaris lumbricoides*); thirteen days later this dose was repeated at 7 a. m. before any food had been taken. The patient stated that at 11:45 he felt a little giddy and sleepy, but this soon passed. The execution took place a week after the second dose, and a postmortem examination was made one hour after death. No hookworms or ascarids were found in the intestinal tract. Sections of his organs were examined microscopically, but showed no signs of degeneration of any kind. Therefore, it is apparent that in single doses carbon tetrachlorid is a safe remedy. The students of an agricultural school who were infested with hookworms received a dose of 3 c.c. of the drug at 6:30 a. m. before any food had been taken; no purgative was given after the drug was administered. They were instructed to carry on their usual mode of life, and restrictions were not placed on their work, play, or diet. Not one of them was inconvenienced by the drug, and they all continued their day's work. All stools passed for three days after treatment were collected and carefully searched for worms. A total of 719 hookworms, or an average of thirty-six for each student, were recovered. Besides these hookworms, thirteen *Ascaris lumbricoides* were passed. Microscopic examination of fecal specimens ten days after treatment showed ova of hookworms in only two specimens, which indicates that 90 per cent. were cured. Two-thirds of the worms were passed on the second day after the treatment. Other observations made show that the drug may be administered safely in doses of from 10 to 20 minims to children 3 and 4 years of age, even when they are seriously ill from various causes. It aids the expulsion of *Ascaris lumbricoides* if it is followed by a purgative, but it is not as effective as chenopodium in killing this worm. The drug does not seriously deteriorate on keeping. Many children were given carbon tetrachlorid which had been stored in the laboratory for three years. It is more valuable than chenopodium for campaigns against hookworm disease because (*a*) patients do not object to its taste; (*b*) it is not necessary to precede or follow the administration of it by a purge; (*c*) it is more efficient than chenopodium and has not the depressing effects of that drug; (*d*) it is much cheaper than any other drug that has been used; (*e*) it can be prepared in a high degree of purity, and a chemically pure preparation should always be used; (*f*) the person who is being treated can do his usual day's work.

Quinin Necrosis of Muscle.—The interest of the case cited by Figdor and Pinnock relates to the early treatment of the patient by intramuscular injections of quinin and its unusual sequel. Necrosis took place, but in none of the other cases of quinin necrosis recorded has there been, as in this case, a definite separation and encysting of the necrosed muscle.

China Medical Journal, Shanghai

May, 1922, **36**, No 3

*Operation for Cirrhosis of Liver. A. I. Ludlow, Seoul.—p. 200.
Gangosa in Hainan; Report of Case. N. Bercovitz, Kachek.—p. 203.
Types of Cerebrospinal Syphilis in China. A. H. Woods, Peking.—p. 206.
Delouser. J. H. Ingram, Peking.—p. 225.
Delousing with Special Reference to Ingram Apparatus. C. W. Young, Peking.—p. 230.
Renal Function Tests. H. W. S. Wright, Tsinaufu.—p. 242.

Operation for Cirrhosis of Liver.—Ludlow makes an incision in the median line between the umbilicus and symphysis pubis. A tube is inserted and the fluid removed by suction or syphonage after which the whole field of the abdomen is explored. The omentum is then sutured with catgut to the parietal peritoneum over as extensive a surface as possible. A small amount of the omentum is then drawn out from the upper part of the wound and tucked under the skin and stitched in place with catgut sutures—a combination of the Talma and Narath and Vander Veer operations. On the patient's return to the ward, the tube is connected with a bottle for continuous drainage which is usually kept up for a week. The fact that there was no operative or postoperative mortality in the last five cases and that the patients were at least much improved, Ludlow thinks, warrants the continuance of the method.

Edinburgh Medical Journal

July, 1922, **29**, No. 1

Significance of Pyuria in Children. J. S. Fowler.—p. 1.
Some Factors Modifying Nutrition of Children: Survey of 3,000 of Most Marked Cases of Malnutrition in Viennese Children, Made in Summer of 1921. M. R. Gribbon.—p. 12.
Variola in Baghdad. H. C. Sinderson.—p. 18.
Spinal Anesthesia. D. N. Kalyanvala.—p. 25.
Lateral Dislocation in Lumbar Spine. J. N. J. Hartley.—p. 34.

Japan Medical World, Tokyo

June, 1922, **2**, No. 6

*Sensitizing Action of Thyroid Extract for Epinephrin. S. Ono.—p. 157.
*Epinephrin Heterogenous Transplantation of Rat Carcinoma in Brain of Adult Mouse and Pigeon. K. Yamasaki.—p. 160.
Power of Peroxydase Reaction of Leukocytes in Acute Pyogenic Inflammation. H. Ohara.—p. 164.
*Active Principle of Korean Ginseng. K. Abe and I. Saito.—p. 166.

Sensitizing Action of Thyroid Extract for Epinephrin.—Ono's experiments show that an active principle of thyroid sensitizes the heart of cold blooded animals (toad) and the blood vessels of warm blooded animals (cow) for the action of epinephrin.

Experimental Inoculation of Mouse Carcinoma.—The result of the inoculation of the mouse carcinoma of Flexner's type into the subcutaneous tissue of mice is entirely negative. But the intracranial transplantation of the same tumor into the same animal gives apparently positive results in more than 64 per cent. The growth of the tumor tissue inoculated is infiltrative, though very slowly. The vital reaction in the tissue around the growing tumor tissue is generally sluggish. Hypodermic transplantation of the mouse carcinoma of Flexner's type into pigeons is absolutely negative, but it gives apparently positive results in the brain of the same animals.

Active Principle of Ginseng.—Abe and Saito found that the substance in ginseng which has inhibitory action on blood sugar is not extracted by petroleum ether or ether, but by pure alcohol. This active principle of ginseng is said to be a glucosid.

Lancet, London

July 8, 1922, **2**, No. 5158

Osteo-Arthritis. A. G. T. Fisher.—p. 55.
Clinical Symptoms of Cerebellar Disease and Their Interpretation. G. Holmes.—p. 59.
*Ten Cases of Delayed Congenital Syphilis. E. D. Spackman.—p. 65.
Tennis Elbow. F. Romer.—p. 67.
*Diastase Reaction of Urine. A. F. Sladden.—p. 68.
*Case of "Carcinoid Tumor" of Meckel's Diverticulum. J. A. B. Hicks and S. Kadinsky.—p. 70.
*Case of Eclampsia in Thirty-Fourth Week Treated by Cesarean Section; Mother and Child Living. A. W. Owen.—p. 70.
*Case of Carcinoma of Cervix in Young Woman Following Gonorrhea. S. G. Luker.—p. 71.

Delayed Congenital Syphilis.—Eight of the ten cases reported by Spackman occurred in full grown serving soldiers, whose ages were between 19 and 31 years; the two civilian patients were aged 17 and 16 years, respectively. In the eight cases there were no signs of a syphilitic breakdown until the men were engaged in the strenuous work of war. Further points of interest in these cases are that four out of eight soldiers were passed into the army as A 1—and that six out of the eight were actually serving in France when their syphilitic symptoms appeared, four of them being combatants in the front line. Syphilis hereditaria tarda, Spackman says, is not a rare disease, and should be diagnosed more frequently than it is in adult life. Aortitis or aneurysms may have a congenital origin and not be the result of acquired syphilis. All cases of syphilis, congenital or acquired, should be placed in the hands of those competent to treat them, and if any permanent benefit is to be expected such treatment must be intensive and thorough. Disease of the eye, in the form of interstitial keratitis, iritis, or choroiditis, often one of the earliest signs, is of great importance in early diagnosis.

Diastase Reaction of Urine.—Urines tested for diastatic activity, Sladden says, should be brought to a standard hydrogen-ion concentration, preferably the optimum, p_H 6.7. In assessing results, the total day's excretion, rather than the unit value alone, should be considered. Low diastase values definitely indicate nephritis as a rule; but not all nephritics (and notably pyelonephritics) have lowered values. Not all types of pancreatic lesions cause excessive diastase output. The test is of much value in dealing with toxemias of pregnancy and allied conditions.

Carcinoid Tumor of Meckel's Diverticulum.—Hicks and Kadinsky assert that no tumor of this nature has been recorded up to date as occurring in a Meckel's diverticulum. The patient was a boy, aged 12 years, who complained of sickness and abdominal pain. Seven weeks before admission he had had an attack of abdominal pain, vomiting and diarrhea, lasting twenty-four hours. The pain recurred about once a week for the next four weeks, and the attack lasted for an hour. After this attacks became more frequent and were accompanied by vomiting. A diagnosis of appendicitis was made, and the patient operated on the same day. At the operation the appendix, which was retrocecal, was found quite normal. A small amount of pus escaped in the region of the cecum, which was edematous and thickened, from the adherence to it of the distal end of an acutely inflamed Meckel's diverticulum. The diverticulum was 3 inches long, kinked and perforated; pus was present in the pelvis. The paracecal glands were enlarged. The diverticulum, appendix, and one gland were removed and the peritoneum drained. The patient made a good recovery.

Early Cesarean Section in Eclampsia.—Owen believes that the 30 per cent. mortality for cesarean section performed for eclampsia for the ten years 1911-1920 could undoubtedly be greatly reduced if prompter action were taken. The interval between the first fit and the operation in his case was just three and a half hours.

Carcinoma of Cervix Following Gonorrhea.—Luker's case occurred in a secundipara, aged 28, in whom carcinoma of the cervix followed an attack of gonorrhea contracted five months previously. The occurrence of a carcinomatous growth during local treatment of the cervical canal for gonococcal cervicitis, Luker thinks, supports the "irritation" theory, in that in this case there was the discharge and also the repeated application of antiseptics.

Medical Journal of Australia, Sydney

June 3, 1922, **1**, No. 22

Tuberculosis. H. W. Palmer.—p. 595.
Teeth and Health. V. MacDonald.—p. 605.
Rheumatic Fever Complicating Advanced Pregnancy. E. B. Heffernan.—p. 608.

June 10, 1922, **1**, No. 23

Pathogenesis of Renal Tumors. E. H. Derrick.—p. 623.
Treatment of Renal Tumors. A. Newton.—p. 634.
Case of Sprue in New South Wales. J. A. Goldsmid.—p. 636.

June 17, 1922, **1**, No. 24

*Operations on Round Ligaments and Their Dangers. H. A. Powell, Adelaide.—p. 653.
Wassermann Reaction as Index of Cure, with Special Reference to Value of Cold Fixation in Technic of Test. C. H. Shearman, Perth.—p. 656.
Stomatitis and Glossitis in Association with False Teeth. M. C. de Garis, Melbourne.—p. 668.
Subacuate Nephritis and Result of Edebohls's Double Decapsulation Operation. R. D. McIntosh, Melbourne.—p. 668.

Operation on Round Ligaments.—In choosing the operation to be used, Powell says, the method that promises the best results is one that conforms most closely to the following considerations: Allows a thorough examination of the pelvis; utilizes the strong inner half (or more) of the round ligament; leaves no free band in the peritoneal cavity; leaves no weak spot in the broad ligament as a possible path for hernia; exercises a partially forward pull on the uterus; allows for the future possibility of pregnancy; allows sufficient space for normal expansion of the bladder.

Practitioner, London

June, 1922, **108**, No. 6

Pulmonary Embolism After Operations. C. Gordon-Watson.—p. 381.
Urticaria Due to Streptococcal Sensitization. A. F. Hurst.—p. 394.
Etiology of Diabetes, and Its Bearing on Treatment. P. J. Cammidge.—p. 396.
Treatment of Internal Hemorrhoids by Injection. A. S. Morley.—p. 403.
Arthritis Deformans. C. W. Buckley.—p. 412.
Value of Massage in Fibrositis. T. Marlin.—p. 425.
Oral Sepsis and Systemic Disease. W. B. Watson.—p. 432.
Treatment of Malaria in Pregnant Women and Newly-Born Children. S. B. Naggar.—p. 441.

Bulletin Médical, Paris

June 17, 1922, **36**, No. 25

Surgical Treatment of Traumatic Epilepsy. C. Villandre.—p. 499.
Treatment of Gonorrhea with Thorium X. Aversenq.—p. 502.

Bulletins de la Société Médicale des Hôpitaux, Paris

May 19, 1922, **46**, No. 17

*The Sign of the Thyroid. J. Parisot and G. Richard.—p. 806.
*Painful Pronation in Children. J. Comby.—p. 810.
*Anaphylaxis to Bread. G. Turrettini.—p. 811.
Argyll Robinson Sign from Skull Trauma. G. Guillain and L. Laederich.—p. 814.
Tabes in Two Europeans from African Syphilis. A. Sézary and J. Alibert.—p. 816.

The Sign of the Thyroid.—Parisot and Richard injected thyroid extract and noted its effect on the heart in 17 cases of hyperthyroidism, in 11 with other thyroid disturbance, 32 with normal glands, and 12 with deficient thyroid functioning —72 in all. The reaction evidently depends on whether the vagus or the sympathetic system happens to be most sensitized at the moment. But one reaction was constant and capital in hyperthyroidism, namely, a pronounced slowing of the pulse, after the massive injection of thyroid extract. They call this the sign of the thyroid. The systolic blood pressure usually declined also, and the oculocardiac reflex was exaggerated. They say that this sign of the thyroid deserves to rank with Goetsch's epinephrin sign and Porak's sign of excessive thyroid functioning. They found it useful in determining or excluding the participation of the thyroid in pluriglandular disturbances.

Painful Paralysis of Infants.—When a child is learning to walk and it falls while its hand is being held by a larger person, the elbow gets a jerk that may displace the head of the radius a little. The result is what Broca called painful pronation, and taught how to cure it by holding the forearm in supination and pressing on the head of the radius while the forearm is flexed on the arm. The radius slips at once back into place. A case is described in which the jerk of the elbow occurred while the babe was sitting in its perambulator. It had hold of the top when the nurse pushed the carriage suddenly forward to escape a vehicle.

Anaphylaxis to Bread.—In Turrettini's case, Quincke's edema developed in a previously healthy woman of 52. The urine was free from albumin, and when no starchy food was taken there was no edema, but whenever she ate any bread the edematous swellings and urticaria returned. Attempts to desensitize have had no or only transient effect, and the edema still returns as regularly as when the anaphylaxis first developed. This was in December, 1920.

Encéphale, Paris

June, 1922, **17**, No. 6

The Care of the Insane. A. Antheaume.—p. 330.
Experimental Study of Cerebellar Localization. André-Thomas.—p 346. Conc'n.
*American Opinion of Psychanalysis. A. Brousseau and O. Raeder.—p. 360.
Mental Complications of Epidemic Encephalitis. Naville.—p. 369. Cont'd.
The Static System and Its Relation to Hypertonic Conditions of Skeletal Muscles. J. Ramsay Hunt (New York).—p. 376.

American Opinion of Psychanalysis.—Rousseau and Raeder report the various discussions on psychanalysis at the Atlantic City congress of neurology in 1921 as reflecting the opinion of American psychiatrists that psychanalysis is merely a new method of exploration of the subconscious and of emotional conflicts. They say that the Americans accept only *une psychanalyse épurée de tous les excès doctrinaux.*

Journal de Médecine de Bordeaux

June 10, 1922, **94**, No. 11

Orthopedic Examination of Schoolchildren. Lalesque.—p. 351.
Mongolian Blue Spot in Bordeaux. Boisserie-Lacroix.—p. 355.
Colloidal Gold in Surgery. J. Guyot and G. Jeanneney.—p. 358.
*Gestation after Nephrectomy. M. Favreau.—p. 359.
Duodenum Intubation. R. Damade.—p. 361.

June 25, 1922, **94**, No. 12

Ambard's Constant in Surgery. Bégouin and Darget.—p. 387.
Induced Asthma Attacks. Creyx, et al.—p. 390.
Gastric Linitis. C. Massias and G. Auriat.—p. 393.
Diphtheria of Trachea with Negative Findings in Nose and Pharynx. L. Cornet.—p. 394.

Gestation After Nephrectomy.—Favreau concludes from the case published here that a normal pregnancy can occur after nephrectomy for tuberculosis as early as one year after the operation. He adds, "Possibly less than this, notwithstanding Mathews' plea in THE JOURNAL, Nov. 19, 1921, p. 1634, for a delay of three years after nephrectomy before a pregnancy." The woman of 24 became pregnant one year after removal of the left kidney for tuberculosis. The fifth month acute pyelonephritis appeared which passed into a torpid phase but flared up anew during the puerperium, and then became torpid again after delivery. The woman was well and up the twenty-fifth day, and suckled the babe until the second month, but this was suspended as she did not regain her pregnancy weight.

Lyon Chirurgical

March-April, 1922, **19**, No. 2

*Arthroplastic Operations for Ankylosis. V. Putti.—p. 121.
*Trauma of Wrist in Children. R. Massart and P. Cabouat.—p. 133.
*Perforation of Gastroduodenal Ulcers. A. Kotzareff.—p. 158.
*Endoscopy of Neck of Bladder. L. Phélip.—p. 171.
*Fracture of Semilunar Bone. E. Destot.—p. 178.
*Clamp for Extraction of Fibromas. H. A. Albertin.—p. 187.

Arthroplasty for Ankylosis.—Putti has now a record of 113 cases of operative mobilization of stiff joints, 10 of the jaws, 38 of the elbow, 17 of the hip, and 40 of the knee, with others in five other joints. The great progress realized in this kind of operations is due to the practice of interposing a flap taken from the fascia lata. He covers with a free flap of this kind both epiphyses, fastening the flaps in place with a few catgut stitches. The joint must be freely exposed but without cutting the parts which preside over motion and weight bearing. The reconstruction of the joint and the results are shown in a number of illustrations and the excellent outcome. He never drains, but lays great stress on the necessity for traction on the distal fragment, the limb in a plaster splint. The traction holds the parts of the joint apart, and he keeps it up for a month. Passive movements are not begun till the tenth day. They are done by the patient himself, with simple apparatus fastened to the bed. To avoid any strain on the joint, it is best for the patient to make these passive movements without assistance, the physician merely supervising. As soon as the wound has healed, Putti begins hot air treatment, at first with an electric apparatus and later with an alcohol heater. This treatment has to be kept up for several months. He does not regard massage as of much importance, believing that the electricity stimulates the principal muscles more effectually. Mechanical treatment need not be begun till the twentieth day. The old, simple Bonnet apparatus is very practical. The patient should not bear his weight on the new joint until the thirtieth day. These new joints pass through a critical period about a month after the operation; the joint may be stiff and a little painful. The hot air treatment should be suspended for a few days, and only cautiously resumed. Extra care for a longer time is required for the jaw and the knee. The chances of success are better with the elbow, next the knee, the jaw and the hip.

Trauma of the Wrist in Children.—This profusely illustrated study of the wrist and its injuries is based on 377 cases of trauma of the wrist in children.

Perforation of Gastroduodenal Ulcer.—Kotzareff protests against an immediate gastro-enterostomy when a perforated ulcer has been sutured. His reason for this protest is the assumption that chronic gastric and duodenal ulcers are caused by infection with a fungus, and by making another opening we invite the localization of this fungus at this point. Askanazy's clinical and experimental research—in which Kotzareff cooperated—seems to have established that *Oidium albicans* is usually responsible for chronic ulcers. In operating, measures must be applied to destroy the oidium in the stomach, duodenum and mouth, otherwise the pus in the peritoneum will be invaded. Wherever there is a lesion in the mucous membrane the oidium is liable to take root. He urges search for the oidium in all ulcer cases and recognition of its causal action.

The Functioning of the Neck of the Bladder. — Phélip's endoscopic study of partial retention of urine has confirmed that the evacuation of the bladder does not depend merely on the opening and closing of the sphincter. There are four movements of the parts involved, and functional derangement from any one of these can be corrected by restoring this functioning to normal. This emphasizes the necessity for endoscopic analysis of the disturbances to allow correction before irreparable damage has been wrought.

Fracture of the Semilunar Bone.—Destot's article is based on twenty-four cases.

Extraction of Fibromas.—Albertin's illustrations show the double-pronged corkscrew device which he screws into the fibroma. The curving prongs aid in cutting out the fibroma while the hold is firm and solid, and there is no hemorrhage where it is worked in. He says it is superior to all similar models, and anyone can make one like it for himself.

Presse Médicale, Paris

June 21, 1922, **30**, No. 49

*Secretion of Pepsin and Pepsinuria. Loeper and J. Baumann.—p. 529.
*Metal Bands for Fractured Bones. A. Lambotte.—p. 530.
*Pregnancy in the Tuberculous. F. Dumarest and P. Brette.—p. 531.

Pepsin.—Loeper and Baumann have been making a special study of the secretion of pepsin, and present data to show that in addition to its protein digesting function, it instigates certain nervous and vascular reactions. It reduces the blood pressure, stimulates peristalsis, and is essentially vagotonic. Hence when pepsin is secreted in excess or in inadequate amounts, besides the purely digestive disturbances that result, there may be general disturbances from the excess or the lack of pepsin. Much pepsin in the fasting stomach content testifies in favor of ulcer and true hypersecretion. The serum and urine of the normal fasting subject do not contain pepsin, but in case of ulcer large amounts of pepsin are found in both serum and urine. The constancy of this fasting finding contrasts with the variability after meals.

Metal Bands for Fractured Bones.—Lambotte's modification of the Parham bands has already been described in these columns when published elsewhere (May 6, 1922, p. 1424). A little slide fits over the band and holds the turned back end, thus rendering it much more solid. Fifteen illustrations show Lambotte's band-passer, vice, etc.

Pregnancy in the Tuberculous. — Dumarest and Brette report nine cases in which a pregnancy or even repeated pregnancies in tuberculous women seemed to have a favorable influence on their disease. They cite Lassègue's three cases in which pulmonary tuberculosis seemed to have been arrested by the pregnancy. Artificial pneumothorax has introduced a new element into the question, and they describe eight cases in which women with a lung in collapse passed safely through an apparently normal pregnancy. It seems in many of such cases that the arrest of menstruation has a decidedly favorable effect. In the progressive immunization of the race, the children of parents with attenuated tuberculosis are the agents. When conceived during the phase of fibrous transformation of the tuberculous process, the child is born with defensive attributes, and his progeny some day will triumph definitely over the tubercle bacilli. All biology teaches that nature does not know of and does not practice any other means of stamping out contagious diseases than by progressive immunization. The cases of tuberculosis in which a favorable outcome is more probable are those with pronounced reactions, and the focus in the lung has had a slow fibrous evolution.

Progrès Médical, Paris

June 10, 1922, **37**, No. 23

Exophthalmic Goiter Syndrome. III. C. Achard.—p. 265.
Indigestion Invites Gastric Crises in Tabes. M. Loeper and G. Marchal.—p. 269.
Principles for Radiotherapy in Surgery. R. Proust.—p. 269.
The Centennial of General Paresis. H. Codet.—p. 273.

June 17, 1922, **37**, No. 24

Present Status of Exophthalmic Goiter. IV. C. Achard.—p. 277.
Thyroid Insufficiency and Sterility. Vignes and Cornil.—p. 283.
Obesity in Children. Lereboullet.—p. 285.

Revue de Médecine, Paris

February, 1922, **39**, No. 2

*Vitamins and Deficiencies in the Diet. G. Mouriquand and P. Michel.—p. 65.
*Chemical Modifications of the Serum in the Course of Liver Disease. Biscons and Rouzaud.—p. 91.
Hemiplegia with Hemichorea. A. Rémond and H. Colombiès.—p. 107.
Current Topics. H. Godlewski.—p. 111.

Dietary Deficiencies.—Mouriquand and Michel review the literature on the vitamins and the practical conclusions which their own clinical and experimental experience has confirmed. They warn not to hesitate to use cod liver oil freely, as indicated, for children of all ages into puberty.

Chemical Changes in the Serum in Liver Disease.—Biscons and Rouzaud found that the cholesterin and the bilirubin content of the blood showed promptly the effect of obstruction of the flow of bile. When the liver itself begins to suffer, then the nitrogen and the sugar content soon show the effect also. During the congestion phase, the azotemia rises, but when the liver becomes seriously diseased, the azotemia declines. This decline may be masked, however, by uremia from retention by the kidneys. The ureosecretory index will reveal whether this is the case. Hypercholesterinemia is to gallstones what uricacidemia is to gout. Hemolytic jaundice, on the other hand, bears the imprint of hyperbilirubinemia. These two cycles are thus distinct, but the liver is a factor in both. Chemical examination of the blood serum may thus give the clue in puzzling conditions, tracing to cholelithiasis certain stomach disturbances. In other cases the normal findings in cholesterin, glucose and urea exculpate the liver and warn to seek elsewhere for the cause of the disturbances which have been masquerading as disease of the liver. But it is in the early detection of liver disease that chemical examination of the blood is most instructive and salutary, prompt treatment enabling us to steer the liver into a safe harbor. A course of alkaline mineral waters for instance has more chance to reduce the hypercholesterinemia and restore normal conditions in the liver, the less advanced the liver affection.

March, 1922, **39**, No. 3

*Shock by Contact. W. Kopaczewski.—p. 129. Conc'n No. 4, p. 211.
*Heart and Aorta Complications of Malaria. F. Tremolières and L. Caussade.—p. 151.
*Is Gonococcosis Curable? P. Lebreton.—p. 166.
*Expression of Eyes as Sign of Syphilis. A. Chelmonski.—p. 172.
Current Topics. H. Godlewski.—p. 175.

April, 1922, **39**, No. 4

Pathology of the Autonomic Nervous System. H. Roger.—p. 193.
Arsphenamin by Subcutaneous Injection. J. Minet and R. Legrand.—p. 230.
Recent Literature on Tuberculosis. H. Godlewski.—p. 244. Cont'd.

The Phenomena of Shock by Contact.—Kopaczewski describes the features which differentiate shock from injection of a suspension, from shock from injection of a colloid, and from the shock of anaphylaxis. Each of these three forms of shock by contact requires different treatment, measures to prevent flocculation or lysis or coagulation. He emphasizes that there are numbers of well tried substances at our disposal for this, capable of reducing the surface tension or augmenting the viscosity without any risk. Among the antilytic substances, cholesterin has been the best studied.

Cardiovascular Complications of Malaria.—The treatment of old heart and aorta lesions for which malaria is responsible has to be addressed merely to the heart. Quinin has no action on the dilatation of the heart once established from the influence of the malaria. The gravity inherent in all heart affections is enhanced by the debility from the malaria and the liability to new febrile attacks.

Is Gonococcosis Curable?—Lebreton is convinced that the gonococcus affects the genital organs more than the urinary organs, in both men and women. It is not enough to clear the urethra of gonococci to insure that the infection has been eradicated. In 164 cases of chronic urethritis in which the urethral secretion seemed to be sterile under the microscope, cultivation of the semen revealed gonococci in 70 per cent. The sperma is evidently responsible in many instances for the infection of the wife when the husband has long been supposedly cured of his gonorrhea. An autogenous antigonococcus vaccine is often effectual in dislodging the gonococci in the

deeper organs. He gives a series of six doses and then waits two weeks and repeats the series once or twice, as the most effectual method yet known for "degonococcization." It proved successful in all but one of sixty-seven chronic cases thus treated, and this one would probably have been cured by a supplementary series. The success was complete also in three cases of suppurating prostatitis, although five series were required in one case. The cure was complete also in three cases of crippling gonococcus rheumatism and in a case of gonococcus pyelonephritis.

Expression of Eyes as Sign of Syphilis.—Chelmonski remarks that the most artistic artificial eye can always be told from a natural eye, and the eyes of syphilitics have a certain aspect which tells the story of the infection. The reactions of the pupils are less pronounced than normal; they may be oval; the anterior chamber may be flat, the cornea dull, the vessels constricted.

Archivio Italiano di Chirurgia, Bologna

May, 1922, **5**, No. 4

*Early Traumatic Epilepsy. P. L. Della Torre.—p. 349.
*Hemostasis for Resection of Liver. E. Angeletti.—p. 400.
Hernial Appendicitis. A. Miliani.—p. 419.
Cystic Protrusion of Ureter into Bladder. R. Cassanello.—p. 429.
*Foreign Bodies and Leukoplasia in Kidney Pelvis. C. Romiti.—p. 449.

Early Traumatic Epilepsy.—This is a study of nine operative cases in the war wounded. Epilepsy developed in 9 per cent. of those wounded in the head during Della Torre's early experience in the war. He gives an illustration of the regions of the skull in which trauma is most liable to be followed by epilepsy. Seven of the nine were cured by his operation and all have resumed their regular occupation, although two still have attacks of the traumatic epilepsy.

Hemostasis in Resection of the Liver.—Angeletti had occasion to remove a large tumor in the liver of a woman of 51. His assistant arrested the hemorrhage by compression with his fingers while Angeletti cut a long strip, over 1 cm. wide, from the aponeurosis of the rectus muscle on each side of the incision, taking up a little of the muscle with it. Each strip was then laid on the liver close to the raw edge, the two strips thus encircling the entire raw area, a little back from the edge. A series of seven or eight U stitches were then taken, traversing the upper strip, the whole of the liver and the under strip, and back again. The U sutures were symmetrical, and when they were tied the tissues forming the edge of the raw expanse were drawn close enough together to insure hemostasis. Another row of sutures was then taken to draw the edges, the sides of the wedge, together, and thus close the gap in the liver. He describes other ways to utilize this principle of an aponeurosis strip for a border to suture into, after resection of the liver. Seven illustrations show the exact technic. In future he would not attempt to drain. The aponeurosis and muscle strip border possibly might be sutured in place before the resection is begun. He reviews the entire history of attempts at bloodless surgery of the liver, crediting the first successful attempt to an Italian surgeon in 1716.

Foreign Bodies in Kidney Pelvis.—Hydronephrosis of probable congenital origin became infected and required long surgical treatment in the course of which four fragments of drainage tubes were left in the kidney pelvis. The young man was finally cured by nephrectomy. The case reaffirms the necessity for postoperative supervision. When the care after operations is left to the family, we can scarcely escape such mishaps.

Pediatria, Naples

June 1, 1922, **30**, No. 11

*Intra-Uterine Transmission of Scarlet Fever. O. Cozzolino.—p. 481.
*Primary Progressive Myopathy; Four Cases. L. Auricchio.—p. 488.
Acute Endocarditis in Nursling with Heart Defect. A. F. Canelli.—p. 495.

Intra-Uterine Transmission of Scarlet Fever.—Cozzolino relates that the mother died the fifth day of scarlet fever that appeared after she entered the maternity for the childbirth. Her child of 21 months died the second day of fulminating scarlet fever that had developed six days after the death of the mother. The new-born child developed scarlet fever when 20 days old. The infant's urine had been pathologic for a day or two, and the child the nineteenth day presented the clinical picture of classic hemorrhagic glomerular nephritis for which no cause could be discovered except the scarlet fever. He thinks the circumstances render intrauterine transmission of the scarlet fever extremely probable.

Primary Progressive Myopathy.—In Auricchio's case the four brothers under 13 presented different stages of the primary progressive myopathy. No benefit was apparent from vigorous thyroid or antisyphilis treatment.

Policlinico, Rome

May 29, 1922, **29**, No. 22

*Relations Between Asthma and Tuberculosis. E. Bufalini.—p. 709.
*Epidemic Lymphadenitis. A. Sala.—p. 717.
*Treatment of Anthrax. T. Biancheri.—p. 718.
*Treatment of Anthrax. L. Conti.—p. 720.
*Postencephalitic Parkinsonism. T. Silvestri.—p. 721.

Asthma and Pulmonary Tuberculosis.—Bufalini tabulates the findings in 10 men and 12 women with asthma, recording the heredity, the antecedents, the response to tuberculin tests, the findings in the lungs, etc. In 15 of the 22 some affection of the respiratory tract had preceded the asthma, but only a few had been tuberculous. Tuberculin tests were positive in 19; active pulmonary tuberculosis was evident only in one instance.

Epidemic Lymphadenitis.—Sala relates that since the epidemic wave of influenza and epidemic encephalitis, there has been a local epidemic of jaundice in his region (900 cases). This was followed last August by an epidemic of buboes. Twenty cases were observed, the glands in the groin swelling and sometimes ulcerating. This lymphadenopathy suggested bubonic plague at first. All the patients recovered after a course of three or four months. Vanni isolated a micrococcus from the glandular lesions which reproduced the disease in guinea-pigs and other animals.

Serotherapy of Anthrax.—Biancheri protests against incision of the focus as intramuscular or subcutaneous injection of the antiserum has always proved effectual in his experience, unless the patient was moribund when first seen. He injects 60 c.c. at first and then 20 c.c. each day. After the local inflammation has entirely subsided he excises the eschar to hasten the healing. Conti, on the other hand, excises the lesion completely with a deep circular incision. The mortality was 3.33 per cent. in sixty cases treated in this way, while it was 20 per cent. in twenty treated by a crucial incision.

Paradoxic Sign of Postencephalitic Parkinsonism.—Silvestri reports two striking cases of the phenomenon to which Masci called attention as was summarized here July 8, 1922, p. 168. In Silvestri's cases the parkinsonism was extremely pronounced in the girl of 13 and the young man at all times except when the girl was dancing and the young man was bicycling. The movements of the dancing girl and the speeding bicyclist seemed to be normal in every respect. Abbruzzetti reported this paradoxic behavior in 1920, and Tilney and Souques have also called attention to it, the latter styling it paradoxic kinesia.

Riforma Medica, Naples

May 1, 1922, **38**, No. 18

*Cause of Adenoids. P. Brisotto.—p. 409.
A Precancer Lesion of the Lip. G. Anzilotto.—p. 411.
*Influence of Pituitary Extract on Bladder. M. G. Serdinkoff.—p. 413.
Simplification of Danecy Ureometer. G. Candido.—p. 417.

Cause of Adenoids.—Brisotto found inherited syphilis certain or very probable in 56 per cent. of 150 children with adenoids, and tuberculosis in 24 per cent. In 8 per cent. there was both tuberculosis and inherited syphilis. Hypothyroidism was evident in 6 per cent., and in 2 per cent. there was a history of alcoholism or consanguineous marriages. He theorizes that the adenoid vegetations represent merely a defensive reaction carried to excess. Resection of the adenoids is only symptomatic treatment; it is useful only when associated with treatment to modify the general condition of the bone and lymphatic systems.

Influence of Pituitary Extract on the Bladder.—Serdinkoff calls attention to the remarkable efficacy displayed by two injections of pituitary extract in a case of retention of urine from paresis of the bladder secondary to pyelonephritis from metritis in a woman of 32. Spontaneous micturition had been

impossible for thirty-five days. The bladder had been enormously distended before the retention was recognized, and the paresis had developed the seventh day of the retention. She had had a similar attack of retention of urine three years before with cystitis, and there was a history of three or four abortions without appreciable cause. The tonus of the smooth muscle of both uterus and bladder was evidently abnormal, and this was effectually combated by the pituitary treatment.

Archivos d. l. Enf. del Corazón, etc., Barcelona

February, 1922, **1**, No. 1

*Interpretation of Variations in Venous Pulse. Durán Arrom.—p. 7.
Idem in the Tuberculous. Idem.—p. 26.
Idem with Thyroid Disease. Idem.—p. 32.

Interpretation of Variations in Venous Pulse.—Durán Arrom compares and citicizes hundreds of venous pulse tracings. He regards as especially important the interval between the *a* wave and the *c* wave.

Archivos Españoles de Pediatría, Madrid

May, 1922, **6**, No. 5

Significance of Chvostek's Sign. E. Nogueras Coronas.—p. 257.
Schick Reaction in Prophylaxis of Diphtheria. Duarte Salcedo.—p. 264.
Bednar's Aphthae? C. de Los Terreros.—p. 273.

Archivos Latino-Amer. de Pediatría, Buenos Aires

May, 1922, **16**, No. 5

*Bibliography on Children's Diseases. J. A. Trillo.—p. 1.

Argentine Pediatric Bibliography.—This compilation was mentioned in the News columns, July 22, p. 311.

Brazil-Medico, Rio de Janeiro

April 15, 1922, **1**, No. 15

Bismuth in Treatment of Syphilis. H. Parreiras Horta and P. Gans.—p. 183.
Vaccine Therapy of Ozena. S. C. da Silva.—p. 184.
Toxicity of Chenopodium. Pio Alves Pequeno Junior.—p. 185.

April 29, 1922, **1**, No. 17

*Medical Ethics. João A. G. Fróes.—p. 211.
Influenza in Its Relations to Air Passages. S. Cezar da Silva.—p. 216.

Medical Ethics.—This lecture on the principles of medical ethics was Fróes' inaugural lecture in the course on clinical medicine at Bahia. He remarked that clinical medicine everywhere is passing through an experience like that of Laocoon's struggle with the serpents. There is only one way to insure victory, that is, to exalt the dignity of the profession, guarding the same as one's own the dignity of other physicians, and maintaining moral, fraternal and scientific relations with the other members of the profession. Medical societies aid materially in the progress of science, stimulating emulation and strengthening the ties of professional brotherhood by better mutual acquaintance. He quotes freely from a French novel "The New Doctor," by Pravieux, to illustrate what he says of the cancer of envy and charlatanism, the latter "the original sin of medicine of old, the shame and disgrace of medicine of today."

Crónica Médica, Lima, Peru

February, 1922, **39**, No. 704

*Sclerosis of Neck of Bladder. E. P. Manchego.—p. 33.
*Correction of Perforation of Palate. F. La Torre.—p. 42.
The Prehemorrhagic Stage in Typhoid. A. Ricaldoni.—p. 48.

Sclerosis of Neck of Bladder.—Manchego remarks that this condition is frequently mistaken for hypertrophy of the prostate in the elderly and for a stricture in the urethra in younger men. In some of the six cases he describes this mistake was made; in two cases there were polyp growths bedsides. Infection is the rule because the catheter has to be used early. The extreme difficulty in voiding urine contrasts with the ease with which even large instruments can be passed into the bladder. Systematic dilation always improves, and resection of the fibrous tissue cures completely in 75 per cent. of the cases. Buerger's method of procedure is described. In two cases Pazos Varela found that the neck of the bladder and upper urethra formed a stiff sheath, requiring resection of the internal sphincter. One of Manchego's patients was left with incontinence after the operation, but this was cured by resecting a fibrous band which had formed. In two cases, time and efforts had been wasted on the mistaken diagnosis of hypertrophy of the prostate. A huge fistula was left.

Perforation of Palate.—The syphilitic bone and mucous membrane lesion healed under treatment, and the defect was closed by suture and a prosthesis.

Gaceta Médica de Caracas, Venezuela

Feb. 28, 1922, **29**, No. 4

History of Gallstone Surgery in Venezuela. S. Córdoba.—p. 44.
Criticism on Above. L. Razetti.—p. 51.

Revista Española de Medicina y Cirugía, Barcelona

April, 1922, **5**, No. 46

*Fracture of the Clavicle. Soler Juliá.—p. 179.
Therapeutic Diets. A. A. Pereira.—p. 184.
*Syphilitic Heart Disease. S. A. Meza and J. Paulis.—p. 199.
The Book of the Plague. A. D. 1599. L. Mercado.—p. 200.

Fracture of the Clavicle.—Soler Juliá gives an illustrated description of the Esquerdo plaster bandage which leaves the hand and elbow joints free, and interferes only slightly with the use of the shoulder. Flannel is cut double in the shape of half of a man's vest. Each half is coated with plaster on a table and then one half is laid on the other, the plaster between, and this half-vest is then fitted over the trunk, packing the axilla thick with cotton. Broad bands of glued tarletan are then wound around the trunk and shoulder, molding the plaster cast to the back and front, and forming a stiff collar that forces the head up a little and toward the sound side. It forms also a stiff sleevelet that prevents the arm from being moved forward. The cotton in the axilla raises the shoulder. Ordinary use of the arms is not interfered with; the boy can play ball with both hands, the housemaid keep on with her duties, and the cast can be removed and massage commenced the twenty-fifth day in the young.

Syphilitic Heart Disease.—Meza and Paulis say that Cesa-Bianchi's recent discovery of spirochetes in the heart in inherited syphilis confirms the necessity for suspecting syphilis in all kinds of heart disturbances. They list twelve different forms of heart disease that it may assume, and emphasize that electrocardiography is one of the most reliable means to detect latent mischief of this kind. By prompt treatment we may avert irreparable damage and sudden early death.

Revista de Medicina y Cirugía, Havana

May 25, 1922, **27**, No. 10

*Fixation of the Kidney. O. Ledón Uribe.—p. 331.
Anomaly in Femoral Artery. E. Brú.—p. 336.
Anomaly in Subclavian Artery. G. Insua Cartaya and L. Carillo y Ortiz.—p. 340.

Fixation of Kidney.—Ledón Uribe frees the last rib and slides the kidney on this rib. A tunnel is made for it under the capsule. He has applied this method in several cases. It avoids the disadvantages of other methods. Only the two small incisions to make the tunnel, in the upper half of the posterior aspect, are required. The illustrations show how the tunnel slopes to fit the rib.

Revista Médica del Uruguay, Montevideo

April, 1922, **25**, No. 4

*The World War Against Tuberculosis. M. Becerro de Bengoa.—p. 305.
Fractures of Anterior Arch of Atlas. A. di Lorenzo.—p. 313.
*Lithopedion. C. Legnani.—p. 316.
Present Status of Bismuth Treatment of Syphilis. José May.—p. 320.

Failure of the World War Against Tuberculosis.—Becerro de Bengoa asserts that the death rate from tuberculosis is constantly increasing, notwithstanding the great concerted efforts against it. He outlines a system of tactics that would exterminate tuberculosis sooner or later. His *formula de la victoria* is to have the entire populace examined for tuberculosis once a year, at public expense, with segregation of the "open" cases in special public or private sanatoriums or colonies, until they are no longer contagious or they die, the breadwinners to be given a pension until recovery or death.

Lithopedion.—In Legnani's case the fetus weighed 1,000 gm. and the size corresponded to term. It was found free in the abdominal cavity, over four years after the last fetal movements had been felt. The woman had borne two children before.

Semana Médica, Buenos Aires

May 4, 1922, **1**, No. 18

Anomaly of Right Subclavian Artery. A. Gutiérrez.—p. 697.
Two Reactions of Piperazin and Lycetol. J. A. Sánchez.—p. 700.
The Vagus and the Sympathetic Systems. P. de Rabinovich.—p. 703.
*Rib Resection for Cheesy Focus in Lung. Gumersindo Sayago and J. M. Allende.—p. 715.
Vaccine from Dissociated Elements of Bacterial Protein. R. Cárcamo.—p. 718.
Cerium Salts in Treatment of Tuberculosis. P. Alurralde.—p. 726.
Need for Organization of the Profession. C. Carreño.—p. 729.

Rib Resection for Cheesy Focus in Lung.—There was a large cavity in the upper lobe of the left lung but the right lung seemed sound. Attempts to induce artificial pneumothorax had failed, but complete success followed resection of ribs, close to the spine. The technic followed was that which Wilms calls "columnar resection"; a total of 60 cm. was resected, from the second to the tenth ribs, inclusive, and, twenty days later, part of the eleventh rib. The chest measure dropped from 88 to 79 cm., the transverse diameter from 28 to 23 cm.

May 11, 1922, **1**, No. 19

*Indications with Difficult Delivery. E. A. Boero.—p. 737.
Biologic Treatment of Infection. H. Dasso.—p. 745.
*Variations in Children's Weight. J. C. Navarro and E. A. Beretervide.—p. 746.
*Resection of Bladder. J. Salleras Pagés.—p. 753.
Polyvalent Hormone Therapy. A. Lamarque.—p. 758.
Apparatus for Recording Reacting Time. V. Tedeschi.—p. 768. Reply. J. Ramón Beltrán.—p. 771.
Farm Colony for the Chronic Tuberculous. F. Gorriti.—p. 773.
*The Extinction Sign of Scarlet Fever. D. J. Rojo.—p. 776.

Indications in Dystocia.—Boero refers to cases in which delivery is impossible on account of the defective development of the lower segment of the uterus. The cervix feels like a cylinder, 5 or 6 cm. long, with three rings slipped over it. The upper ring is so rigid that any attempt to deliver by the natural route is sure to tear the uterus. The presenting fetus is high, almost unreachable from the vagina. This form of dystocia is seldom recognized until late, after the ineffectual labor contractions have long continued. He has had this form of dystocia in women who had never had any trouble in former pregnancies. The lower segment of the uterus had been vigorously cauterized in some of the cases he describes, and he incriminates the cicatricial changes left from this, or from curetting, as impeding the normal stretching of the cervix. It differs in several respects from the dystocia for which spasm of Bandl's ring is responsible. The ineffectual labor contractions merge into tetanization, and this passes into a phase of rigid retraction. The tissues in this phase tear easily. In five of the six cases described, the uterus ruptured during the efforts to deliver the fetus by the normal route, even when the fetus had been dismembered.

Variations in Weight of Children.—Navarro records the variations in weight of 110 children given various tonics. He is inclined to ascribe the remarkable gains made by some of the children, in large part, to the mental impressions from the weighing and attention otherwise, and urges systematic weighing as a means to rouse the appetite and interest of children in their physical development.

Partial Resection of Bladder.—In Salleras' case the cystoscope showed an ulcerated tumor, 3 cm. in diameter, high in the bladder. The first symptom had been hematuria, in the man of 52. The hematuria returned occasionally during the following two months, and there had been slight pain just above the symphysis, and the weight declined. Salleras did not attempt endovesical measures, but resected that portion of the bladder wall with the myo-epithelioma and the adherent peritoneum. The health has been perfect during the three years to date. Attempts at electrocoagulation would have been disastrous as it would have been impossible to reach the entire tumor with it.

Diagnostic Blanching or Extinction Phenomenon in Scarlet Fever.—Rojo's experience has confirmed the specific and reliable nature of the Schultz-Charlton phenomenon in the differential diagnosis of scarlet fever. In his eighteen cases it was positive in nearly 78 per cent. and constantly negative in the four cases of eruptions of other nature. It was positive by the second day in fourteen of the eighteen scarlet fever children and allowed their prompt isolation. The test is made with 0.5 or 1 c.c. of normal human serum injected intradermally where the eruption is most pronounced. The eruption disappears completely in a zone from 2 to 10 cm. wide around the point of injection in case of a positive response.

Archiv für Gynäkologie, Berlin

May 20, 1922, **116**, No. 1

*Gas Gangrene Infection of Uterus. H. Brütt.—p. 1.
Surgical Treatment of Delivery with Contracted Pelvis. A. Wollner.—p. 26.
Teeth in Ovarian Teratomas. J. Steinhoff.—p. 53.
Test of Liver Function in Pregnancy. B. Walthard.—p. 68.
Action on Humors of Colloidal Silver (Dispargen) and Pregl's Solution in Puerperal Septic Processes. A. Mahnert and A. Sautner.—p. 98.
Ovarian Hematoma. H. Runge.—p. 116.
Aneurysm of Uterine Vessels. E. Vogt.—p. 129.
Can a Pregnancy Last Over 302 Days? E. Zweifel.—p. 140.
*Dilating Instrument: The Metranoikter. S. Stephan.—p. 161.
Torsion of Cervix of Myomatous Uterus. N. Ellerbroek.—p. 171.
New Anomaly of Umbilical Cord. B. Ollow.—p. 176.
Young Human Ovum in Situ. W. v. Möllendorff.—p. 200.

Gas Gangrene of the Uterus.—Brütt describes six cases of physometra from puerperal gas gangrene infection of the uterus. In one case the fulminating gas gangrene infection proved fatal in thirty hours from the stormy onset. In the second case, anaerobic streptococci must be incriminated for the fatal complicating peritonitis, and pneumonia in another case, two weeks after the operation. The uterus was removed in all the cases, but the conditions were already beyond help in all but one case. In another woman, a gangrene inducing metritis was the work of anaerobic streptococci alone. Peritonitis always accompanied the gas gangrene. With lymphangitic or thrombophlebitic sepsis, the fulminating course renders any operation futile.

Mechanical Dilatation of the Uterine Cervix.—Stephan calls attention to an old and forgotten dilator which he thinks is superior to all similar instruments in vogue. The two blades are connected with a spring forming a half circle which holds the blades at rest, slanting outward, about 5 cm. apart. The blades are closed and held with forceps as the instrument is introduced. The spring forces the blades apart and they stretch the lumen to 5 cm. at the upper ends of the blades. In his two and half years' experience with it there was never any injury except occasionally a slight erosion at the internal os, where the blades spread farthest apart. The shape of the dilatation is the physiologic shape.

Deutsches Archiv für klinische Medizin, Leipzig

May 23, 1922, **139**, No. 5-6

*Research on Percussion and Auscultation. III. P. Martini.—p. 257.
Gas Interchanges in Obesity and Pituitary Disease. R. Plaut.—p. 285.
*Test for Bilirubin in Blood. E. Herzfeld.—p. 306.
Pathogenesis of Cancer Anemia. M. J. Roessingh.—p. 310.
Factors Regulating Venous Blood Pressure. C. Kroetz.—p. 325.
*Metabolism in Spleen and Liver Disease. E. Grafe.—p. 354.
*Influence of Muscular Work on Diabetes. E. Grafe and H. Salomon.—p. 369.
"Roentgen Study of Heart Function." H. Assmann.—p. 380.

Research on Percussion and Auscultation.—Martini's work is being done on a special scientific grant. Six plates give the findings in normal and infiltrated lungs to illustrate the laws he has deduced. He remarks parenthetically that the diagnostic importance of bronchophony is not appreciated yet. The modification in this in case of pathologic conditions can often be detected earlier than any other changes.

Color Test for Bilirubin.—Herzfeld commends for quantitative estimation of bilirubin in the blood serum, Hammarsten's reagent as an extremely simple and reliable test. It is not necessary to remove the albumin. The reagent is one part of 25 per cent. nitric acid and nineteen parts of 25 per cent. hydrochloric acid. To use, one part of the reagent is diluted with four parts of alcohol.

The Metabolism with Spleen and Liver Disease.—In seven of the nine cases Grafe tabulates, the spleen was very much enlarged; in the other two the liver was extremely pathologic. Two of the splenomegaly cases were of the Gaucher type, and one was cured by splenectomy. Four were of the Banti type. The temperature was normal or subnormal, but the

basal metabolism in all was abnormally high. True primary cirrhosis of the liver, even when accompanied by enlargement of the spleen, does not seem to send up the basal metabolism, while it is always high with splenomegaly of the Gaucher and Banti types. "When the gas exchanges in a case of splenomegaly show the basal metabolism within normal range, then splenectomy is contraindicated, as there is no toxic element to be eliminated by removing the spleen."

Influence of Muscular Exercise on Combustion of Sugar in the Diabetic.—Grafe and Salomon report research on nine diabetics which showed that the combustion of sugar increased absolutely during exercise, but relatively it dropped materially. The greater expenditure of energy must have been at the expense of the fat. In conclusion they remark that all such experiences confirm the truth of the saying that fatigue is a sensitive and reliable gage of the injury of the body by any disease process.

Deutsche medizinische Wochenschrift, Berlin

June 2, 1922, **48**, No. 22

*High Blood Pressure without Kidney Involvement. F. Külbs.—p. 717.
*Conservative Operation on Esophageal Diverticulum. König.—p. 719.
Healing of Esophageal Carcinoma Following Roentgen Irradiation. A. Beck.—p. 720.
Comparison of Roentgenograms of Lungs. F. Peltason.—p. 721.
*Pituitary Tumors. M. Kontschalowsky and A. Eisenstein.—p. 722.
Occurrence and Significance of Reticular Fibers in Syphilis and Other Cutaneous Diseases. E. Zurhelle.—p. 724.
Volvulus Affecting the Entire Small Intestine. Heymann.—p. 725.
Healing of Fractures, and Pseudarthrosis. M. Zondek.—p. 727.
Treatment of Ankylosis of Jaw. Bockenheimer.—p. 729.
Treatment of Enuresis with Camphor. C. Pototzky.—p. 730.
Acute Occlusion of Intestine. G. Ledderhose.—p. 733.
Technic of Treatment of Displaced Uterus. H. Freund.—p. 735.

High Blood Pressure Without Kidney Involvement.—Külbs has found that there is a comparatively large number of patients with high blood pressure without clinically demonstrable affections of the kidneys. In fact, the number seems to be increasing. He discusses a series of 288 cases. The working class does not seem to be affected as much as the professional or educated circles. The causal factors seemed to be: psychic excitement, the climacteric, syphilis, nicotine, alcohol, obesity, gout, and organic heart disease. The majority of the patients improved (reduction to from 150 to 160 mm. of mercury) under treatment: proper rest periods, restriction of salt, venesection, small doses of digitalis, and potassium nitrate. As a rule, the subjective symptoms were relieved and the physical and mental capacity were improved.

Conservative Operation on Esophageal Diverticulum.—König has tried a conservative operation on esophageal diverticulum in two cases. He thinks that it is indicated at least in weak patients who could scarcely survive the radical removal of the sac, and that, after more extensive trial, it may prove to have still wider indications, in order to avoid the element of danger in the more radical operation, in which the mortality ranges around 6 or 8 per cent. The sac of the diverticulum is exposed and dissected free. The contents are pressed out. The flabby, folded sac is drawn up laterally and sutured to the periosteum of the hyoid bone in its posterior portion. To make the fixation still more secure he draws the loose sac up under the anterior portion of the omohyoid muscle, which on that account must be left intact; it is also fastened to this muscle by a few stitches. If the sac is sufficiently long this gives a very firm fixation, and the omohyoideus helps also in relieving the sac of its contents. Local anesthesia is employed. The sac remains but the main thing is that food does not stagnate in it.

Roentgen Irradiation of Hypophysial Tumors.—Kontschalowsky and Eisenstein state that, in view of the fact that attempts at operative removal of tumors of the hypophysis result still in a very high mortality, recurrences also being very common, since in many cases the operator does not succeed in removing the whole tumor, roentgen irradiation, which with cautious technic is not dangerous and usually gives good results, is to be preferred. Only in cases in which roentgen irradiation proves useless (mostly colloidal cysts) and the eye symptoms and the severe headaches become alarming should an operation be undertaken as a last resort.

Jahrbuch für Kinderheilkunde, Berlin

June, 1922, **98**, No. 5-6

Influence of Whey on Intestinal Epithelium. IX. P. György.—p. 245.
*Pyocyaneus Infection in Children. E. Dudden.—p. 257.
Uremia and the Ambard Constant in Sick Infants. I. C. Koch.—p. 276.
Acromegaly and Giant Growth in Children. K. Kundratitz.—p. 292.
*The Wildbolz Urine Reaction in Children. J. C. Schippers and S. B. de Vries Robles.—p. 299.
*Composition of Infant Brain. E. Faerber.—p. 307.
*Serodiagnosis of Scurvy. Leichtentritt and Zielaskowski.—p. 310.

Ecthyma Gangrenosum.—In Dudden's three cases of ecthyma gangrenosum the pyocyaneus seemed to be solely responsible. The children were 5 and 7 months and 4 years old, and none survived. The gangrenous affection was on the back or seat or both, and it had followed pneumonia in all. In another child, the pyocyaneus had induced lesions on the stomach and intestine mucosa which resembled those on the skin in his cases. Irritation from urine, stools and sweat should be warded off in prophylaxis with weakly children. Hydrotherapeutic procedures might be given a trial, as well as symptomatic measures. In the older child, a tendency to retrogression of the skin lesions was evident toward the last, but the pyocyaneus was cultivated from the spinal fluid.

The Own Urine Reaction in Tuberculous Children.—The verdict was decidedly unfavorable after repeated examination of sixty-seven children over long periods.

Chemical Analysis of Infants' Brains.—The infants analyzed in the group here reported had all died from toxicosis. Nothing differing essentially from the findings in the brains of infants dying from other causes could be discovered.

Serodiagnosis of Scurvy.—Leichtentritt and Zielaskowski have been studying in human blood the normal protecting influence against trypanosoma infection in animals. This trypanocidal property was found in human blood and the blood of apes by Laveran in 1902, but it has wide individual differences. The suggestion is here made that these individual differences may be due to the resisting powers of the organism at the moment. If this is accepted, then the inference follows that the intensity of the trypanocidal action may serve as a gage for the resisting powers. In the prematurely born, the children suffering from infection or from lack of vitamins, the resisting powers are at such a low ebb that the production of the trypanocidal substance is temporarily in abeyance. Hence the negative response to tests for this substance may aid in the differential diagnosis and, in the grouping of certain maladies, reveal their connection.

Klinische Wochenschrift, Berlin

April 8, 1922, **1**, No. 15

Gout and Nuclein Metabolism. A. Schittenhelm.—p. 713.
Pathogenesis of Chronic Gastric Ulcer. R. Nissen.—p. 715.
Quantitative Test for Indican in Blood. Snapper and van Vloten.—p. 718.
Bases and Indications for Calcium Therapy. Dresel and Jakobovitz.—p. 721.
*Experimental Research on Autotransfusion of Blood. Furukawa.—p. 723.
Effect of Gymnasium Work and Sports on Adults. Herxheimer.—p. 725.
Nerve Paralysis and Irritation in Relation to Trophic Changes. Brüning.—p. 729.
Treatment of Spondylitis with Cautery. W. H. Wirth.—p. 732.
Immunologic Conditions of Foot and Mouth Disease in Cattle and Guinea-Pigs. P. Uhlenhuth and W. Bieber.—p. 734.
Stimulative Effect of Food in Purin Metabolism. Joel.—p. 735.
Technic and Clinical Value of Colloidal Gold Test of Cerebrospinal Fluid. O. Grütz.—p. 735.
A Thoracopagus. W. Gorn.—p. 736.
Bilateral Herpes Zoster. E. Hillenberg.—p. 737.
Susceptibility of Young Children to Influenza. Meyer.—p. 737.
Roentgen Irradiation of Uterine Carcinoma. L. Seitz.—p. 741.
Phenomenal Memories. T. G. Hegge.—p. 742.
Recent Views on Blood Sugar. P. György.—p. 745.

Research on the Treatment of Anemia by Autotransfusion of Blood.—Furukawa states that the problem of rejuvenation of the blood supply of the organism entered upon a new stage when Kasys Naswitis made his researches to determine whether Haberlandt's observations on plants with respect to the causation of increased cell proliferation by so-called wound hormones would hold good for the higher mammals and more particularly, man. Naswitis' method of experimentation follows: Blood was taken from a subject and was either made incoagulable or was defibrinized. It was then

placed in a freezing mixture and allowed to freeze, in order to destroy the blood cells. It was now thawed out and permitted to stand for several hours at room temperature. It was afterward heated to body temperature and was reinjected intravenously or intramuscularly into the same subject from whom it was taken. The result was a considerable increase of red blood cells, which could be noted in the course of several days. The treated subject received in addition no other substance from any donor: Only his own blood was reinjected in a changed form, sometimes without fibrin; in any event, after it had lost something of its original character. Nevertheless, hematopoiesis was favorably influenced. Furthermore, Naswitis was able to show that the good effect was associated with or dependent on the fact that the blood had undergone changes or that certain substances had been removed. Through the partial destruction of the blood, irritative or stimulative substances are produced therein which excite to activity the hematopoietic or blood-producing organs or regions. Following Haberlandt's terminology with regard to plants, Naswitis names these substances the "wound hormones" of the blood. These wound hormones have nothing to do with the hormones of the endocrine glands. In order to test the claims of Naswitis, Furukawa brought about induced anemia in rabbits and dogs by injections of phenylhydrazin. When the anemia had reached a certain degree, he took from the experimental animal a small quantity of blood, treated the blood after Naswitis' method and reinjected it into the animal, either intravenously or subcutaneously. The result was an increase of red blood cells. Before the frozen and thawed blood is reinjected, it must be allowed to stand at least from two to three hours at room temperature, for defibrinated blood exerts a toxic effect unless it is permitted to stand several hours. If it is reinjected too soon, it will produce shock effects and may possibly cause death. Furukawa holds that the relations of blood decomposition to renewed hematopoiesis in the normal body have been suddenly opened up by the Naswitis experiments. The whole research has been done at the Pathology Institute at Berlin.

Medizinische Klinik, Berlin

June 11, 1922, **18**, No. 24

*Gynecology in Relation to War Conditions. A. Mayer.—p. 749. Cont'd.
*Injection Treatment of Hemorrhoids. I. Boas.—p. 753.
*Protein Therapy. K. Brandenburg et al.—p. 756.
Nature and Physiotherapy of Muscular Rheumatism. E. Tobias.—p. 760.
Office Treatment of Acute Inflammation of Fingers. Henrichs.—p. 764.
Structure and Weight of Atom. O. Liesche.—p. 765.
Rudimentary Obstetrics. E. Runge.—p. 767. Cont'n.
Recent Literature on Social Hygiene. H. Ziemann.—p. 769.

Gynecology and Obstetrics During the War.—Mayer discusses the effect of war conditions on menstruation and childbearing. There was a large number of cases in which a child was born during the war after years of supposedly irremediably sterile marriage. Since the war, the number of women who apply with complaints of sterile marriage is strikingly large. He quotes Siegel's conclusions from 300 cases of conception during the soldier husband's brief leave: namely, that between the first and ninth days after menstruation begins the offspring are boys, and between the fifteenth and twenty-second days girls are conceived. Between these two periods, either girls or boys may be conceived, but later than these periods, between the twenty-third and twenty-eighth days, conception rarely occurs. The question is still unsolved as to the phase of the ovum during which it becomes fecundated. The menses do not return after the ovum is once embedded in the uterus, but menstruation probably can occur during the days after fecundation of the ovum before it has grown large enough for embedding or has even reached the uterus.

Injection Treatment of Hemorrhoids.—For six years Boas has been treating hemorrhoids with injection of 96 per cent. alcohol. He here reiterates his assertions in regard to the almost certain success of this excellent method of treatment. He declares that any treatment by injections must be regarded as equivalent to an operation. To insure aseptic thrombosis, the patient must stay unconditionally in bed for four or five days. Intra-anal hemorrhoids do not need drastic measures; they can be kept in control or cured with salves and diligent use of sitz baths. The intrarectal ones must each be delivered outside the anus for diagnosis and treatment. This can usually be accomplished by straining; if not, an enema of hot salt solution or glycerin will often answer the purpose. Direct stretching of the rectum wall relaxes the internal nodules and may induce paresis of the sphincter; this is liable also when specula are used. Aspiration with a Bier vacuum glass has always proved the best means for drawing out the hemorrhoids. The aspiration is continued, after local anesthesia, until the nodules are distended to the utmost, and they do not collapse when the cupping glass is lifted. Very small amounts of alcohol suffice; even for the largest nodules, he does not inject over 10 or 20 drops (0.5 to 1 c.c.). It is important to have no alcohol on the tip of the needle when the nodule is pierced, as otherwise the thin wall of the vein becomes necrotic. He injects all the hemorrhoids at the one sitting, beginning with the small ones, as these are liable to slide back first. There may be no inconveniences from the procedure, or there may be a sensation of fullness as the hemorrhoids swell. They must be reduced at once when all have been injected, smearing with liquid petrolatum, pushing them up into the rectum as high as possible. During the four or five days in bed only fluid food is allowed; then a saline purge is given, supplemented by an oil enema. Even the first stool may be painless. The factors that brought on the hemorrhoids in the first place must be kept under control. He has had a return of hemorrhoids in only six of the 130 cases he has treated with the alcohol injections. In two instances he repeated the injections once or twice. When there is already prolapse of the hemorrhoids, it is futile to waste time on palliative measures. Profuse hemorrhage may occur even without hemorrhoids. The only cure here seems to be complete extirpation of the entire hemorrhoidal plexus.

Protein Therapy.—R. Schmidt of Prague was the one who introduced systematic parenteral injections of 5 c.c. of milk into therapeutics, and he discusses its value in internal diseases, Elschnig in eye disease, and Buschke in skin and venereal diseases. This shock treatment has thrown light on processes such as "protoplasma activation," "increased vital efficiency," the "healing fever," and the "healing inflammation." The organism seems to be thrown out of the balance which had allowed the disease to become installed. Schmidt says that this shock treatment seems to be indicated whenever an acute inflammatory process has passed into a torpid chronic phase. The parenteral injection induces a local reaction in the focus, and has proved useful in torpid joint affections, in tuberculous processes in bone and peritoneum, and even in fibrous and torpid febrile processes in the lungs. Acute processes like erysipelas may also be remarkably favorably affected. In the hemorrhage of typhoid, the milk injection has proved an excellent hemostatic. He says that neuralgia is another promising field, trigeminal and sciatic neuralgia, and asthma. Stimulation of diuresis may occasionally be another indication for it. Dragging subfebrile states may be transformed by it. The same as tuberculin, it may benefit in general paresis. He adds that protein bodies may serve usefully as a sensitizing principle to enhance the action of organotherapy; for example, by combining thyroid treatment with the milk injections, we might act more effectually on obesity. In all forms of protein therapy he advises to begin with small doses, not over 0.1 or 0.5 c.c. of milk, repeating the intragluteal injection on alternate days for four or five weeks, with the same or larger doses. The maximum he allows is 5 c.c. Slight focal and general reactions are desirable.

Elschnig says that the effects of protein therapy in eye affections have been capricious: fine results in some and no effect in others. Nonmycotic iridocyclitis seems to benefit most, and acute gonococcus conjunctivitis in the earliest stages.

In skin and venereal affections, Buschke says, the healing process seemed to be hastened a little in some cases, especially with gonococcus epididymitis and arthritis, and he was impressed with the relief from the pain. The local hyperemia may be the explanation of the benefit. He warns

that latent tuberculous foci are liable to flare up under it. The complete retrogression of a bubo or other lesion was very seldom observed under it, and never when the gonococcus was involved.

Münchener medizinische Wochenschrift, Munich

May 26, 1922, **69**, No. 21

*Primary Carcinoma of the Buccal Cavity. H. Küttner.—p. 771.
Effect of Deep Narcosis on Color of Blood from the Capillaries. F. Rost and Ellinger.—p. 772.
*After-Treatment of Osteomyelitis. A. Hofmann.—p. 773.
*Test Sedimentation of Erythrocytes. W. Dreyfus and P. Hecht.—p. 775.
Effect on Aviators of Lack of Oxygen. F. Noltenius.—p. 776.
Transient Roseola in Recurrent Fever. Oettinger and Halbreich.—p. 778.
Puncture of Prevertebral Abscess. F. Schede.—p. 779.
Rotation of the Cheek in Plastic Surgery. J. Esser.—p. 780.
The "Language" of Bees. III. Karl von Frisch.—p. 781.
Sensibility and Sensitization in Radiotherapy. Voltz.—p. 782.
Experiment with Immune Serum in Cerebrospinal Meningitis. E. Thomas.—p. 783.
Various Uses of Mustard for Compresses. F. Rohr.—p. 784.
Treatment of Endemic Goiter. Grassl.—p. 785.
Perforative Diverticulitis of the Sigmoid Flexure. J. Dubs.—p. 785.
Complete Luxation of the Lumbar Vertebrae. W. Förster.—p. 786.
Appendicitis with Situs Inversus. F. Franke.—p. 786.
Two Cases of Chronic Ankylosis of the Spine. J. Brennsohn.—p. 787.

Operative Treatment of Primary Carcinoma of the Buccal Mucosa.—Küttner reports results in his series of 266 cases of primary cancer of the buccal mucosa. There were 155 tongue cancers, 35 carcinomas of the floor of the mouth, 15 of the mucous membrane of the cheeks, 12 of the hard palate and 49 of the tonsils. Histologically, they were nearly all typical pavement-cell carcinomas of the epithelium; there were only two instances of glandular cancer. Sex incidence was as 81 to 19, men predominating. The largest contingent of men was furnished by the 45-50 age group; the largest percentage of women were of the 30-35 age group. There were no patients under 20, only 4 between 20 and 30; 43 per cent. of the patients were heavy smokers; 22 per cent. (exclusively men) presented leukoplakia near the carcinoma. Syphilis was demonstrable in 15.5 per cent. of the cases; in 33 per cent. chronic traumatic irritants, such as the sharp edges of carious teeth and the pressure of artificial teeth, could be incriminated. Most mouth cavities showed signs of neglect. Sixty-one per cent. of the patients were subjected to a radical operation; 21.4 were inoperable from the start. From the time local anesthesia was routinely applied, the mortality from lung complications (until 1908, 14 per cent.) has been reduced to 4.4 per cent. The operation consists of two distinct acts: a most thorough eradication of the neck glands and the extirpation of the tumor, sometimes in one sitting and sometimes in two. These cancers are always very refractory, and he regards 17.2 per cent. of permanent cures in tongue cancer as better than the average result. Only when early diagnosis is followed by early operation, and no time is lost over useless diagnostic and therapeutic measures, will the results be improved. The mistake is often made, in the presence of a positive Wassermann test, of ruling out carcinoma, whereas the predisposition of syphilitics, especially if they are heavy smokers, to carcinoma of the mouth ought now to be widely known. Roentgen irradiation has so far proved of little value. Radium treatment, which is said to have accomplished better results in America than roentgenotherapy, cannot be used extensively in Germany, for the present, on account of the heavy expense involved.

After-Treatment of Osteomyelitis with the Bier Constricting Band.—Hofmann admits that he has gone a step further than Härtel and has treated (or tried to treat) not only chronic but also acute cases of osteomyelitis by the Bier method of passive hyperemia. Of his twenty-five cases, sixteen were chronic and nine acute affections. In the chronic form the procedure gave very satisfactory results, for the two principal claims: shortening of the healing process and securing of a better looking scar, were fully substantiated. He describes his technic in detail.

Sedimentation of Red Corpuscles in the Prognosis of Chronic Pulmonary Tuberculosis.—Dreyfus says that the suspension stability of the erythrocytes promises to become an important aid in determining the activity of a tuberculous process, furnishing a more exact and more reliable indicator in regard to the course of the infection in a given case than observation of the temperature curve.

Zeitschrift für Tuberkulose, Leipzig

May, 1922, **36**, No. 4

*The Income in Relation to Tuberculosis. C. Flügge.—p. 245.
*Children in Tuberculous Families. Braeuning and Hollmann.—p. 255.
*Thoracoscopy. Unverricht.—p. 267.
Mode of Action of Tuberculin. H. v. Hayek and L. Wieser.—p. 288.

The Relations Between the Death Rate from Tuberculosis and the Income.—Flügge concludes from numerous statistics cited that what determines the prevalence of tuberculosis is the frequency of intercourse between children and tuberculous adults in a contagious stage, and this is often dependent on the income. But it need not be, he declares. Droplet infection can be avoided in the homes of the poor as well as elsewhere, with proper care. Civilized communities have learned to bathe and change linen and use individual drinking glasses, and a generation may come in which it will be considered a disgrace to shed droplets around. When children are trained in this, the spread of tuberculosis will be much restricted. Great progress in arresting the disease may be expected with better feeding. Dinners and suppers should be given the tuberculous with moderate incomes. The best way to maintain the appetite is to sell or give tickets at the preventorium which will be honored at various eating houses, allowing a choice. Arrangements might also be made with the eating houses for delivery of the food at home. The tickets should not cost more than an ordinary cheap meal, but should entitle the holder to an extra nourishing meal. A wide field for useful effort is offered in these attempts to insure extra nourishing food for the tuberculous while striving to maintain their interest and appetite. He declares in conclusion that the prevalence of tuberculosis and the death rate from it are entirely different values, and cannot be used as if they represented approximately the same thing.

Children in Tuberculous Families.—Braeuning and Hollmann present evidence that it is possible to protect young children against infection from open tuberculosis in the homes of the poor. The infant mortality at Stettin, 1911-1919, was 17 per cent. while it was this same figure among ninety-nine infants in poor families with open tuberculosis under the supervision of the tuberculosis dispensary workers. The training to avoid droplet, contact and dust infection has evidently borne fruit.

Thoracoscopy.—Unverricht's experimental and clinical research has demonstrated that the character of a pleural effusion must be ascertained before attempting to destroy adhesions with the thermocautery or otherwise. When the effusion shows increased numbers of neutrophils, the attempt had better be abandoned, as the pleura is unable to cope with the bacteria released by the endopleural cauterization. No other type of effusion forbids it. He used Jacobæus' endoscope and thermocautery, both introduced into the interpleural space inside a trocar. Adhesions taken from seven cadavers showed no signs of large blood vessels or lung tissue, even in fibrous bands up to 1 cm. thick. In four of his ten cases the procedure was a success, breaking up the adhesions and allowing complete pneumothorax. In four other cases the adhesions were not thoroughly destroyed although clinically the procedure has been a success in one case, and roentgenologically in all. In two cases he failed to sever the adhesions. A subcutaneous emphysema was a frequent complication and in three cases a serous effusion followed. A broad fibrous band can be mobilized under thoracoscopy by extrapleural resection of the portion of rib to which the adhesion has grown. This was done in one case with good effect, releasing the collapsed lung from traction by the stout adhesion that fastened it to the wall of the chest.

Zeitschrift für urologische Chirurgie, Berlin

June 12, 1922, **9**, No. 3

Pneumoradiography of Bed of Kidney. H. Boeminghaus.—p. 51.
*Congenital Anomalies in Posterior Urethra. A. Glingar.—p. 75.
Tuberculosis in Congenitally Abnormal Kidney; Two Cases. H. Reil.—p. 82.

Surgical Import of Duplication of Ureter and Pelvis. T. Hryntschak.—p. 87.
Laceration of Inferior Vena Cava. P. Rosenstein.—p. 102.
Case of Leukoplakia of Kidney Pelvis. L. Kraul.—p. 117.

Congenital Bands and Valves in the Posterior Urethra.—Glingar's patient had had difficulty in micturition and dull pains in the perineal region for some years, for which no explanation was evident. At the age of 40 a congenital band was discovered and severed, evidently a congenital anomaly. A second case was recently encountered, the young man applying for relief from urethritis, in which no gonococci could be discovered. His disturbances dated from two years before. Gradual correction of the anomaly under urethroscopy is advised, as incontinence has been known to follow excision of a valve formation of this kind.

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*Dosimetry in Roentgenotherapy. K. Fritsch.—p. 545.
Gritti's Amputation. F. Bähr.—p. 546.
*Resection of Bone to Remedy Finger Contracture. Eckstein.—p. 547.

Transplantation of Testes in Relation to Homosexuality.—Kreuter relates his experience with the transplantation of half of a testis taken from a confirmed homosexual pervert in the prime of manhood. It was implanted in a man who had undergone bilateral castration two years previously, but whose general health was good. The patient was not aware of the origin of the testis implant. The patient recovered normally from the operation. Eight months later he expressed himself as "satisfied" with the results of the operation. He has occasional erections, but insists that the penis is becoming constantly reduced in size. His sexual instincts have remained heterosexual. There is not the slightest indication of any homosexual effect resulting from the implantation, as might be expected from Lichtenstern's statement that he has cured homosexual patients of perverted sexual instincts by implantation of heterosexual testes. Owing to such reports it has been concluded by some that sexual tendencies might be associated with certain cells of the interstitial gland. Kreuter thinks his operation as above cited contradicts this theory. In fact, he holds that the transplantation of testes with a view to incorporating a truly functioning endosecretory organ in man is scarcely justifiable. As a suggestive measure it may, in some cases, accomplish something.

Median Prostatectomy.—Oehler states that the unfavorable conditions for drainage after suprapubic prostatectomy induced him to try median prostatectomy as recommended by Berndt and Praetorius in 1914 and 1918 and since. He was pleased with the simple technic (which he describes in detail) and the unusually slight shock from the operation. Although the method has not as yet found general acceptance among surgeons, Oehler thinks it certainly deserves a trial by all. The problem of gravity drainage of the prostate cavity is solved by this method in a most excellent manner.

Present-Day Dosimetry in Relation to the Effect of Roentgen Irradiation on Tumor Cells.—Fritsch sets forth that present-day dosimetry is based on the belief that tumor cells are killed by roentgen rays, or at least that their capacity to multiply is destroyed; that is, that irradiation has an immediate effect on the tumor cells. Recent investigations, however, would seem to indicate that this belief cannot be upheld and that the effect of roentgen rays is indirect; that the rays strengthen the local tissue reactions that have already set in against the action of the tumor cells, and increase or accentuate the defense measures of the whole organism. If this assumption should be confirmed, dosimetry must be put on an entirely different basis; for in that event it is not a question of killing the tumor cells but of discovering in each case the stimulation that is necessary in order to secure the most favorable reaction. It is not so much statistics as it is serious research that is needed to solve the problem, and thus give to roentgenotherapy an essential impetus.

Shortening the Bone to Remedy Finger Contracture.—Eckstein during recent years, has given up trying by operative efforts to lengthen and mobilize the shrunken soft parts but endeavors instead to restore the normal proportions between the bone and soft parts by resecting from the body of the first phalanx a piece of bone from 1 to 2 cm. long. The operation is carried out under local anesthesia by an incision alongside of the extensor tendon, and the result is that the finger can then always be extended without difficulty, since the flexor tendon though impaired sufficed for this purpose. The cicatricial tissues of the flexor tendon assumed the function almost as well as if a normal tendon were present. He thinks the method might perhaps be applicable to Dupuytren's contracture, although he has never tried it himself.

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*Prevention of Puerperal Fever. F. Ahlfeld.—p. 562.
Buccal and Rectal Bacteria in the New-Born. R. Salomon.—p. 563.
"Origin of Cavities in Human Ovum." Comment. Temesváry.—p. 567.
Uterine Carcinoma in Pregnancy, Childbirth and Puerperium. E. O. Gross.—p. 567.
*Rectal Injuries After Radioactive Treatment. W. Kolde.—p. 576.
*Nucleic Acid in Puerperal Infection. J. Hofbauer.—p. 580.

Prevention of Puerperal Fever.—Ahlfeld reports that, without using rubber gloves, without employing rectal examination, without restricting internal examinations, without omitting preliminary vaginal lavage, and although patients were continually examined by students, they were able to get excellent results from the standpoint of mortality, for out of 8,753 patients only one died of puerperal fever after a preceding normal birth. This one fatal case doubtless resulted from self-examination, or evolved from an existing internal affection. Ahlfeld gives this report to show that good results can be secured without resorting to the extreme precautions recommended by Döderlein.

Treatment of Rectal Injuries After Radiotherapy.—Kolde describes two cases of injury of the rectum from radioactive treatment. In one case there was ulceration in the rectum; in a second case a very large defect of the rectum with a fistula into the vagina. To combat the rectal ulcer, he employed starch enemas with from 10 to 20 drops of opium; also diathermy, the positive electrode in the vagina, the negative over the sacrum. Under this ambulant treatment, gradual improvement was noticeable. Organotherapy was also used. The rectal ulcer healed but the patient still complains of weakness. In the second case, after pursuing a waiting policy for some time, he at last constructed an artificial anus in the region of the sigmoid. The results were good and the patient recovered her weight and strength. Kolde reproaches himself however that two years before, on appearance of the mesothorium injuries, he did not employ diathermy to check the necrosis; secondly, he admits that it was a technical error on his part that he did not do a sigmoidostomy at once when the fistula developed. He would thus have saved the patient two long years of illness and much pain. He urges, therefore, under such conditions not to follow a waiting policy too long but to institute curative measures as soon as possible.

Nucleic Acid in Puerperal Infection.—Hofbauer extols the value of nucleic acid in puerperal infection. The effect is heightened when intravenous injections of pituitary extracts are added.

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Improvised Device for Closing Mounts in Fluids. Kovács.—p. 249.